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Michael J. Houston, Editor

Advances in Consumer Research, Volume 15

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Preface

This volume reflects the contents of the program of the 1987 Annual Conference of the Association for Consumer Research, which was held October 8—11, 1987 at the Hyatt Regency Hotel in Cambridge, MA. The papers contained in this volume come from three sources. First, the main source of papers is the set of papers accepted for presentation at the conference through the competitive review process. Second, several papers come from presentations accepted as part of special session proposals submitted to the conference. However, many authors of special session presentations opt not to publish their papers in *Advances in Consumer Research*. Such decisions leave the conference proceedings void of the content of what are often some of the most leading—edge sessions at the conference. In an attempt to reflect the content of special sessions where most of the authors have chosen not to publish their papers in *Advances*, the organizers of these sessions were invited to write papers that summarized the contents of the sessions. Consequently, the third source of papers in this volume is the special session "overview" paper. It is my hope that with the inclusion of these papers this volume more completely captures the content of the conference program.

I feel compelled to express my gratitude to several people without whose help and encouragement the tasks of conference chair and proceedings editor would have been much more difficult. First, I must thank Jim Bettman who, as President-Elect of ACR, asked me to take on the 1987 conference and never once questioned my vision of the conference. Jim's presidential address was the keynote event of the conference and leads the contents of this volume. I must also thank Keith Hunt who in his role of Executive Secretary is the "heart and soul" of ACR. More importantly, for a conference chair he is the "answer man." Also providing many answers for me was the 1985 conference chair, Rich Lutz.

The scholarly content of a conference and its proceedings comes from authors of papers. I thank all of the participants in the 1987 conference. Decisions regarding the content were made by two important groups of people: the conference program committee and the competitive paper reviewers. Members of each group are identified on subsequent pages of this volume.

Dealing with the large volume of submissions to the conference was made much easier by two graduate students, Karen Bretzman and Madhu Visawanathan. The secretarial staff of the Marketing Department of the University of Minnesota helped in the massive mailing effort necessary for an ACR conference.

Any conference held 1000+ miles from the program chair's location requires an effective arrangements chair. Mary Lou Roberts of the University of Massachusetts—Boston performed this role for the 1987 conference in superb fashion. Without her the smooth conduct of the conference would have been impossible. Her efforts are particularly admirable given that she agreed to serve in this capacity during a phone call that started out with me saying, "You don't know me but..."

The reader will hopefully notice that the appearance of this volume of *Advances* is a substantial improvement over previous volumes. Final papers were submitted on diskettes for the first time. I would like to thank the authors and their typists for coping with the new system. Most importantly, I must thank Jim Muncy for his massive efforts in converting the diskettes to the "hard copy" you have in front of you.

Finally, my gratitude goes to Pat, my wife, and Kerry, my daughter, for their patience during conference preparations. They seem to understand better than anyone why Dad does things that take him away from the dinner table rather than things that put food on it.

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Comments on the Production of *Advances in Consumer Research, Volume 15*

This year's *Advances* has a different look to it. It is due to us incorporating the technology of desktop publishing into the production process. This year was an experiment and now we know much more about what is required to produce a publication such as this with the tools of desktop publishing. Some readers may wonder what was involved in this process (either out of curiosity or due to a desire to produce a document such as this). Since this is the first document of this type that we are aware of, we decided to include a brief description of what is involved when one moves from the old technology of oversized mats to the new technology of desktop publishing to produce a volume that is comprised of 100+ different papers written by many different authors. This document is proof that it can be done. However, quite a lot is needed to do so. There were seven major steps to the production of this year's *Advances in Consumer Research*.

Step 1: Convert to Microsoft Word on the Macintosh. The first step in the process was to convert all files to one computer system and one type of document. The Macintosh system was chosen because of the desktop publishing and graphics software available. The major potential disadvantage of this selection was that most authors worked on IBM/compatible computers. However, Dayna Communications, Inc. developed the hardware and software which enables one to read IBM/compatible files directly into the Macintosh. With this device, reading an IBM/compatible file into the Macintosh proved to be as easy as reading a Macintosh file into a Macintosh. All of those who had papers accepted this year had access to a Macintosh or an IBM/compatible computer. In case someone did not have access to such a system, we provided an option whereby an author could send a printed copy of his or her paper to us and we would pay a secretary to input it into the form we needed. The author would then reimburse us for this expense. Of the one hundred and three papers accepted, only one person chose this alternative¹. This one person stated that he had access to the correct equipment but decided that it would be better if we handled it. Thus, everyone contributing to this year's *Advances in Consumer Research* had access to an IBM/compatible or a Macintosh computer. Beyond simply getting all files onto one system, they all needed to be converted to the same word processing software (for reasons discussed later, Microsoft Word, Version 3.0 was chosen). This was not much of a problem because several different software packages are available which convert word processing files of one type to word processing files of another type. Though sometimes we had to go through two packages to convert a file into Microsoft Word (e.g., from WordPerfect to IBM Microsoft Word to Macintosh Microsoft Word), it was a relatively easy process that did not consume much time. We initially thought that converting all of the files to one type of word processor on one system would be the most difficult step. It actually turned out to be relatively straightforward². This gave us a false sense of optimism early in the process that the project would be quick and easy. However, the difficult part of this process was yet to come.

Step 2: Copy to Master File. The next step in the process was to get each file into one unified format. Since Microsoft Word allows documents to be linked when printing, there was no need to create one large file containing all of the text of all of the papers. Rather, a separate file was created for each document. Each of these files needed to be uniform. Thus, one master file was created. This master file did not contain any text except some header and footer information. It was segmented into two sections (one for the title/authors which was two columns wide and one for the text of the document which was one column wide). It also contained all of the styles needed to format the document (see the next step). We then made one hundred and three copies of this master file (one for each paper). Then through the copy-and-paste utility, we moved all of the text from the documents created in the previous step to these new documents. While making this transfer, we did three things that assisted us in getting these documents into the desired format. Before copying, we converted all files to RTF format³. Within RTF format, we changed all underlined words to italics and all superscripted and subscripted characters to a uniform level⁴. We also copied the title and authors lines to a separate section. This allowed us to have this material span two columns. Finally, it was at this stage that we copied material from the title to the headers.

¹ Others did need to have their papers rekeyed but chose to do so on their own.

² There were a few files that were problematic in converting. However, almost all of these could be traced to the same word processor at the same university. Eventually, through using a few tricks, these files were also converted.

³ RTF is a form of the document where all Microsoft Word formats are encoded into ASCII commands, thus making an all-ASCII document containing all of the information relevant to the formatting of the document. These ASCII codes can be changed (either manually or through a search and replace command) and when RTF is interpreted, the style of the interpreted document reflects these changes.

⁴ Occasionally, RTF was used to overcome other unique problems. For example, in one paper, we needed to convert all of the text in one particular font to another font while not affecting any other text. This was easily done in RTF by simply changing the number assigned to the font from which we wished to change to the font number we wished it changed to.

Step 3: Format Document. Once all of the text was into a set of master files, we then formatted these master files. This involved formatting the headlines, indenting quotes, hypotheses, references, etc., placing the footnotes, and taking care of any other special formatting required by a specific paper. In order to assist us in this process, authors were asked to submit their files in a special format with commands imbedded which would indicate the proper formatting. Though this uniform format simplified the process substantially, it is probably not a necessary step. In retrospect, it does not appear that the the extent to which this simplified the process for us justified the amount of effort required by each author to get his or her paper into the proper format. One major advantage of using Microsoft Word is the ease with which one can format material using style sheets. In each master document, we had styles set up for section titles, subsection titles, footnotes, quotes, hypotheses, tables, figures, and references. Thus, we simply needed to invoke these styles (often through one keystroke) to do most of the formatting. Here, some unique problems needed to be solved. Often this was done in a relatively unsophisticated manner. For example, there was a problem when footnotes were referenced from the title of the paper (e.g., when an author acknowledged financial support). Since the title spanned two columns, referencing a footnote from within the title resulted in the footnote spanning two columns also. Here, we manually placed a footnote marker in the title (i.e., a superscripted "1") and then went to the first line of the document (i.e., the first section title such as "Abstract") and inserted the footnote there with a blank as the reference mark. Within this first footnote, we manually placed a "1" in the place where the footnote reference mark needed to be. We then, from within the page setup command, indicated that footnotes should be numbered from two rather than one.

Step 4: Insert Figures, Tables, and Equations. By far the most difficult and most time consuming step in the process was formatting the figures, equations, and tables and inserting them into the papers. To draw the figures, we used three programs as needed: MacDraw, MacDraft, and More. Though this was somewhat time consuming, it was not very complicated. Microsoft Word has a unique set of commands built in that make setting equations relatively straightforward. Combining these commands with the use of the proper font, setting of equations was much like the figures: time consuming but not complicated. Unquestionably, the most complicated and difficult part of this process related to the setting of the tables. Here, we needed to manually place the tabs and then manually place the tab stops. Initially, we did this through a spreadsheet program but eventually, we wrote our own program. Even with this program, this step was extremely complicated. *Well over half of the time required by this project was spent in formatting tables. Until some way is found to simplify the process of setting tables, producing a document such as this via the technologies of desktop publishing will be a time consuming task.*

Step 5: Paginate Documents. With all of the text and graphics in place, the document was then paginated. This often meant manually moving text so that tables and figures would not be split between pages or so that large spaces would not be left when tables and figures were moved to the next page. Though this would have been made easier by using some software dedicated specifically for desktop publishing (rather than word processing), we felt that Word was still a good choice due to its style sheets and footnoting capabilities.

Step 6: Send Page Proofs to Authors. To insure that we did not make any major errors, page proofs were sent to authors for corrections. In addition to allowing them to check our work to make sure we did not make mistakes, we also allowed them to make minor changes to correct grammatical and spelling errors that they may not have caught in an earlier draft of their paper.

Step 7: Make Corrections/Print Final Document. Upon receiving the page proofs back, we made the needed corrections and then printed the final document. Here, the ability of Microsoft Word to link documents proved to be extremely helpful. All of the documents were linked and printed at one time. The document was then checked in detail one more time for mistakes. The mistakes identified were changed. The needed pages were reprinted and then the final document was sent to the printer.

The major advantage of this new approach is that it results in a document that is consistently formatted. It also overcomes many limitations that are arising as most people move away from typewriters and dedicated word processors to personal computers and laser printers. The process is possible with today's technology, but it is time consuming and does require a significant amount of computer hardware and software. Now that this project has been completed, we know much more about what it requires. If anyone wishes to discuss this process further or has specific questions, please call (note that starting in the Fall of 1988, I will be in the Marketing Department at Clemson University, Clemson, South Carolina).

James Muncy
Texas Tech University

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**Association for Consumer
Research Annual Conference
October 8-11, 1987
Hyatt Regency Hotel
Cambridge, Massachusetts**



A C R
C A M B R I D G E

**Conference Chair:
Michael J. Houston, University of Minnesota**

THURSDAY, OCTOBER 8

10AM - 5PM ACR EXECUTIVE BOARD MEETING

1PM - 7PM REGISTRATION

6PM - 8PM EARLY BIRD RECEPTION

**FRIDAY, OCTOBER 9
8:30AM - 10:00 AM**

1.1 Special Session: Inferences from the Price Cue: A Multidisciplinary Perspective

Chairs: Merrie Brucks, University of North Carolina
Valarie Zeithaml, Duke University

"Brand Name and Point of Purchase Information as Mediators of the Price-Quality Relationship"
Carl Obermiller, University of Washington

"Price and Quality: Do They Live Together or Are They Just Good Friends,"
Linda Showers, Illinois State University
Peter Dickson, Ohio State

"Catching P-Q's with a Nomological Net"
Rosemary Key, Ohio State

"Price as an Indicator of Quality Dimensions"
Valarie A. Zeithaml, Duke University
Merrie Brucks, University of North Carolina

"Testing the Causal Relationship Between Price and Perceived Value"
Kent B. Monroe, Virginia Polytechnic Institute and State University
Akshay R. Rao, University of Minnesota

"Consumer Perceptions of Price Promotions"
Ann Beattie, Columbia University
Gwen Ortmeier, Harvard University

"The Impact of Congruent Information of Price Sensitivity"
Joel Huber, Duke University
Morris Holbrook, Columbia University
Barbara Kahn, UCLA

Discussant: John B. Wheatley, University of Washington

1.2 Competitive Paper Session: Measurement and Analysis of Consumer Behavior Constructs

Chair: Richard Oliver, University of Pennsylvania

"The Measurement and Moderating Role of Confidence in Attributions"
Donald R. Lichtenstein, Louisiana State University
Scot Burton, Louisiana State University

"A Structure Analysis of Buying Style Variables"
Jamshid C. Hosseini, Marquette University
Rajeshkar G. Javalgi, Marquette University

"A Management Science Assessment of a Behavioral Measure of Brand Loyalty"
Terry Elrod, Vanderbilt University

Discussant: George Brooker, University of Puget Sound
Murphy Sewall, University of Connecticut

1.3 Special Session: The Components of Pictorial Representation

Chair: Trudy Kehret-Ward, UC-Berkeley

"Pictorial Components as Antecedents of Attitude Toward the Ad"
Nancy Artz, Northwestern University
Alice Tybout, Northwestern University
Joanna Leff, Art Encounter, Evanston, Illinois

"Scene Perception and the Goal/Activity Relevance of Objects:
Therese Louie, UCLA

"Transformational Analysis of Goal-Relevant Object Schema"
Trudy Kehret-Ward, UC-Berkeley

Discussant: Morris Holbrook, Columbia University

1.4 Special Session: New Perspectives on Attitude Polarization: Is Mere Thought Enough?

Chair: Ruth Ann Smith, Virginia Polytechnic Institute and State University

"Attitude Polarization Under High and Low Involvement"
Barbara Loken, University of Minnesota
Jan Shimanski, University of Minnesota

"The Moderating Effect of Product Knowledge and Style of Processing on the Attitude Polarization Process"
Scott MacKenzie, Indiana University
David Mick, University of Florida

"The Role of Consumers' Schematic Knowledge in Self-Generated Attitude Change"
Ruth Ann Smith, Virginia Polytechnic Institute and State University

Discussant: Deborah Roedder John, University of Minnesota

1.5 Special Session: Social Values and International Marketing: Methodological Issues

Chair: Lynn R. Kahle, University of Oregon

"The Concept of Consumer Ethnocentrism and Its Role in Foreign Product Choice Behavior"
Terence A. Shimp, University of South Carolina
Subhash Sharma, University of South Carolina

"Problems with VALS in International Marketing Research: An Example from an Application of the Empirical Mirror Technique"
Sharon E. Beatty, University of Alabama
Pamela M. Homer, University of Texas at Austin
Lynn R. Kahle, University of Oregon

"Adaptation of the Rokeach Value Survey to Consumer Research, with Applications to International Marketing"
J. Michael Munson, Santa Clara University
Edward F. McQuarrie, Santa Clara University

"Consumption Values in Selected Pacific Rim Countries"
John K. Wong, Washington State University
David K. Tse, University of British Columbia

Discussant: William D. Wells, DDB Needham Worldwide Advertising

**FRIDAY, OCTOBER 9
10:30AM - NOON**

2.1 Special Session: Inferences from the Price Cue: A Multidisciplinary Perspective

(Session Continued)

2.2 Competitive Paper Session: Schema-Related Effects in Consumer Behavior

Chair: Valerie Folkes, University of Southern California

"The Generality of Typicality Effects on Preference and Comparison: An Empirical Test"
James Ward, Arizona State University

"The Flip Side of the Persuasion Equation: Does a Product Influence a Spokesperson's Public Image?"
Tina Kiesler, University of Southern California

"Endorsements - Scripts, Schema and Roles: Theoretical Framework and Preliminary Tests"
Paul Sergi Speck, University of Tennessee
David W. Schumann, University of Tennessee
Craig Thompson, University of Tennessee

Discussant: Richard L. Celsi, University of South Carolina

2.3 Special Session: Cognitive and Affective Processing of Verbal and Visual Information in Advertising

Chair: Richard F. Yalch, University of Washington

"Prediction of the Viewer Response Profile from Visual, Verbal, and Emotional Aspects of Commercials"
Esther Thorson, University of Wisconsin-Madison
Maria Heide, University of Wisconsin-Madison
Thomas J. Page, Michigan State University

"Modality Effects in Television Advertising"
Wendy Bryce, Western Washington University
Thomas J. Olney, Western Washington University

"The Affective and Cognitive Dimensions of Pictures in Advertising: An Extension of Mitchell & Olson"
Art Heimbach, University of Washington
Richard F. Yalch, University of Washington

Discussant: Linda Alwitt, Leo Burnett Co.

2.4 Competitive Paper Session: Attributes, Attitudes, and Values

Chair: Rebecca Holman, Young and Rubican

"Attribute Deficiency Segmentation: Measuring Unmet Wants"
James H. Myers, Claremont Graduate School

"Investigating the Experiential Dimensions Product Evaluations' "
Lawrence J. Marks, Kent State University
Susan Higgins, Kent State University
Michael A. Kamins, University of Southern California

"The Explanatory Power of Values in Preference Judgements: Validation of the Means-End Perspective"
W. Steven Perkins, University of Texas at Dallas
Thomas J. Reynolds, University of Texas at Dallas

Discussant: Richard Pomoza, University of Pittsburgh-Bradford

2.5 Special Session: Behavioral Theories of Pioneering Advantage

Chair: Allan Shocker, University of Washington

"Market Pioneering, Learning, and Preference"
Gregory S. Carpenter, Columbia University
Kent Nakamoto, University of Arizona

"Category Expectations and Market Pioneering"
Deborah Marlino, MIT
Mita Sujana, Pennsylvania State University

"Order of Entry Effects in Hierarchical Models of Brand Choice"
Rashi Glazer, Columbia University
Barbara Kahn, UCLA
William L. Moore, University of Utah

"The Application of Prototypes and Categorization Theory in Marketing: Some Problems and Alternative Perspectives"
S. Ratneshwar, University of Florida
Allan D. Shocker, University of Washington

Discussant: Glen Urban, MIT

**FRIDAY, OCTOBER 9
NOON - 1:30PM
Luncheon
Business Meeting
Presidential Address**

**FRIDAY, OCTOBER 9
1:45PM - 3:15PM**

3.1 Special Session: The Potential of Expert Systems in Marketing and Consumer Research

Chairs: Abraham D. Horowitz, General Motors Research Laboratories
J. Edward Russo, Cornell University

"A Frame-Based Model and Simulation of Consumer Response to Advertising"
Raymond R. Burke, University of Pennsylvania

"What Media Planners Need to Know about Consumer Behaviour for Developing a Plan"
Andrew A. Mitchell, University of Toronto

"A Knowledge-Based System for Product Information"
Abraham D. Horowitz, General Motors Research Laboratories
J. Edward Russo, Cornell University

"Models of Consumer Decision Aids Usage: 'Deciding How Much to Decide'"
Meir Karlinsky, Carnegie-Mellon University

"Cross-Method Validation of an Approach to Inferring Production-System Models of Decision Making by Induction"
Robert J. Meyer, UCLA
Imran S. Currim, New York University
Nahn T. Le, UCLA

Discussants: John McCann, Duke University Richard Morgan, Teknowledge, Inc.

3.2 Competitive Paper Session: Consumer Perception, Evaluation, and Judgment

Chair: Dipankar Chakravarti, University of Arizona

"Learning Context and the Development of Product Category Perceptions"
Eloise Coupey, UCLA
Kent Nakamoto, University of Arizona

"A Probabilistic Functional Approach to Analyzing Individual Evaluation of Compiled Nutrition Information"
Paul Prabhaker, SUNY-Buffalo
Paul Sauer, SUNY-Buffalo

"The Influence of Feedback and Counter Arguments on the Calibration of Probabilistic Judgments"
Jayashree Mahajan, University of Arizona
John C. Whitney, Jr., Harvard University

Discussant: Thomas Page, Michigan State University

3.3 Special Session: Integrating Academic and Advertising Thought: Building Consumer Behavior Theory While Contributing to Advertising Practice

Chair: Susan Heckler, University of Michigan
Deborah J. MacInnis, University of Arizona

"Investigating Advertising Strategies in Consumer Behavior Research"
Susan E. Heckler, University of Michigan

"The Relationship Between Executional Cues and Emotional Response to Advertising"
Deborah J. MacInnis, University of Arizona
Robert W. Westbrook, University of Arizona

"An Examination of the Role of Information Formats on Information Processing and Decision Making"
Julie A. Edell, Duke University

"The Often Subtle Linguistic Cues in Advertising"
Larry Percy

3.4 Competitive Paper Session: Individual Differences in Involvement and Information Processing

Chair: Gabriel Biehal, University of Maryland

"Compliant, Aggressive and Detached Personality Types Differ in Generalized Purchasing Involvement"
Mark E. Slama, Utah State University
Terrell G. Williams, Utah State University
Armen Tashchian, Kennesaw College

"Consumer-Object Relations: A Conceptual Framework Based Analogously on Sternberg's Triangular Theory of Love"
Terence A. Shimp, University of South Carolina
Thomas J. Madden, University of South Carolina

"Factors Affecting the Use of Conceptually Driven and Data Driven Processing"
Joan Meyers-Levy, UCLA

Discussant: April Atwood, University of Washington

3.5 Special Session: Communicating Effectively to Consumers through Salespeople: A Look at Competent Salespeople"

Chair: Harish Sujana, Pennsylvania State University

"What to Look for in a Sales Professional: A Consumer's Guide"
George O. Klemp, Charles River Consulting

"A Way to Look at Customer and Salesperson Expectations"
Siew Meng Leong, National University of Singapore
Deborah Roedder John, University of Minnesota

"Salespeople's Knowledge of Customers and Selling Strategies"
Harish Sujana, Pennsylvania State University
Barton A. Weitz, University of Florida

"Differences in Selling Effectiveness: A Categorization Process Perspective"
David M. Szymanski, Texas A&M University
Gilbert A. Churchill, Jr., University of Wisconsin

Discussant: William D. Perreault, University of North Carolina

3.6 Competitive Paper Session: Macro Aspects of Consumer Behavior

Chair: Mary Gilly, University of California, Irvine

"Coping with the Uncertainty of Consumer Markets"

Lauranne Buchanan, University of Illinois
Wanru Su, University of Illinois

"The Cultural Content of Cognition and the Cognitive Content of Culture: Implications for Consumer Research" C

Martin S. Roth, University of Pittsburgh
Christine Moorman, University of Pittsburgh

"Do Geographic Subcultures Vary Culturally?"

James W. Gentry, University of Nebraska
Patriya Tansuhaj, Washington State University
L. Lee Manzer, Oklahoma State University
Joby John, Bentley College

Discussant: Thomas C. O'Guinn, University of Illinois

**FRIDAY, OCTOBER 9
3:45PM - 5:15PM**

4.1 Special Session: The Potential of Expert Systems in Marketing and Consumer Research

(Session Continued)

4.2 Competitive Paper Session: Research on the ELM

Chair: George Belch, San Diego State University

"The Role of Argument Quality in the Elaboration Likelihood Model"

Charles S. Areni, University of Florida
Richard J. Lutz, University of Florida

"Some Central and Peripheral Thoughts on the Routes to Persuasion"

Paul W. Miniard, Ohio State University
Peter R. Dickson, Ohio State University
Kenneth R. Lord, SUNY-Buffalo

"Personality and Ad Effectiveness: Exploring the Utility of Need for Cognition"

Curt Haugtvedt, University of Missouri
Richard E. Petty, Ohio State University
John T. Cacioppo, University of Iowa
Theresa Steidley, University of Missouri

Discussants

Carl Obermiller, University of Washington
Mary Jo Bitner, Arizona State University

4.3 Special Session: What is Television Viewing?

Chair: Marian Friestad, University of Oregon

"Now You See Them - Now You Don't: Frequency and Duration of Exiting Behavior in a Home Viewing Environment"

Daniel R. Anderson, University of Massachusetts

"The Scientific Analysis of Commercial Breaks"
Peter Collett, Oxford University

"Attention to Program Context in a Natural Viewing Situation: Effects on Memory and Attitudes Toward Commercials"
Esther Thorson, University of Wisconsin- Madison
Xinshu Zhao, University of Wisconsin-Madison
Marian Friestad, University of Oregon

"The Changing Commercial Environment: Preserving the Power of Television"
Martin I. Horn, DDB Needham Worldwide
Michael Atkin, DDB Needham Worldwide

Discussant: Herbert Krugman

4.4 Competitive Paper Session: Family Decision Making: Influence, Conflict, and Joint Decisions

Chair: W. Christian Buss, SUNY-Albany

"The Resolution of Conflict in Joint Purchase Decisions by Husbands and Wives: A Review and Empirical Test"
Margaret C. Nelson, SUNY-Albany

"Toward Understanding the Dynamics of Household Decision Conflict Behavior"
William J. Qualls, University of Michigan

"Adolescents' and Mothers' Perceptions of Relative Influence in Family Purchase Decisions: Patterns of agreement and Disagreement"
Ellen R. Foxman, Washington State University
Patriya S. Tansuhaj, Washington State University

Discussant: Kim P. Corfman, New York University

4.5 Competitive Paper Session: Consumption, Leisure Time, and Work

Chair: Ronald Faber, University of Minnesota

"Time Budgets and Consumer Leisure-Time Behavior: An Eleven-Year-Later Replication and Extension (Part II - Males)"
Douglas K. Hawes, University of Wyoming

"Individual and Dyadic Consumption of Time: Propositions on the Perception of Complementarity and Substitutability of Activities"
U.N. Umesh, Washington State University
William A. Weeks, Baylor University
Linda L. Golden, University of Texas at Austin

"The Fortunate Few: Production as Consumption"

Scott D. Roberts, University of Mississippi
John W. Schouten, University of Utah
Debra L. Scammon, University of Utah

Discussant: Alan Andreasen, California State-Long Beach

**SATURDAY, OCTOBER 10
8:30 AM - 10:00AM**

5.1 Special Session: Theoretical Directions for Research on Transformational Advertising

Chair: Jerry Olson, Pennsylvania State University

"Transformational Advertising: A New Way to Look at Advertising Effects"
Sheryl R. Petras, University of Michigan
Christopher P. Puto, University of Michigan

"Two Meanings for 'Transformation' "
John Deighton, University of Chicago

"Narrative Advertising: Stories and the Transformation of Experience"
Gregory W. Boller, Pennsylvania State University

"Lecture and Drama"
William D. Wells, BBD Needham Worldwide

5.2 Competitive Paper Session: Issues in Conjoint Analysis and Multidimensional Scaling

Chair: Michael Belch, San Diego State University

"The Effects of Range-Frequency Manipulations on Conjoint Importance Weight Stability"
Elizabeth H. Creyer, New York University
William T. Ross, University of Pennsylvania

"On the Design and Analysis of Correlated Conjoint Experiments Using Difference Designs"
Jordan J. Louviere, University of Alberta
George G. Woodworth, University of Iowa

"A New Multidimensional Scaling Methodology for the Representation of Inter-Product Substitutability"
Wayne S. DeSarbo, Southern Methodist University
Richard R. Batsell, Rice University

Discussant: U.N. Umesh, Washington State University

5.3 Special Session: Findings from the Consumer Behavior Odyssey

Chair: Russell W. Belk, University of Utah

"Deep Meaning in Possessions: The Consumer Behavior Odyssey"
Melanie Wallendorf, University of Arizona
Russell Belk, University of Utah
Deborah Heisley, Northwestern University
Thomas O'Guinn, University of Illinois
Scott Roberts, University of Mississippi

"Interpreting Consumer Mythology: A Literary Criticism Approach to Odyssey Informant Stories"
Jeffrey F. Durgee, Rensselaer Polytechnic Institute

"Steps Toward a Psychoanalytic Semiology of Artistic Consumption: A Meta-Meta-Meta-Analysis of Some Issues Raised by the Consumer-Behavior Odyssey"
Morris B. Holbrook, Columbia University

"To Be Like Them: Emulating Stars--Observations in Naturalistic Settings"
Thomas C. O'Guinn, University of Illinois

"Market Pitching and the Ethnography of Speaking"
John F. Sherry, Northwestern University

"Collectors and Collecting: Some Functions and Symbolism of Collecting Behavior"
Russell W. Belk, University of Utah
Melanie R. Wallendorf, University of Arizona
John F. Sherry, Northwestern University
Scott Roberts, University of Mississippi
Morris B. Holbrook, Columbia University

5.4 Competitive Paper Session: Elaboration and Emotion in Information Processing

Chair: Nancy Thal Frontczak, Metropolitan State College

"Television Program Elaboration Effects on Commercial Processing"
Kenneth R. Lord, SUNY-Buffalo
Robert E. Burnkrant, Ohio State University

"Motivation, Ability, and Opportunity to Process Information: Conceptual and Experimental Manipulation Issues"
J. Craig Andrews, Marquette University

"On Assessing the Emotionality of Advertising Via Izard's Differential Emotions Scale"
Chris T. Allen, University of Cincinnati
Karen A. Machleit, University of Cincinnati
Susan S. Marine, University of Cincinnati

Discussant: Manoj Hastak, University of Illinois

5.5 Competitive Paper Session: Innovation and the Diffusion Process

Chair: Robert Ruckert, University of Minnesota

"The Industrial User as Product Innovator: Markets, Hierarchies and Patterns of User-Initiated Innovation"
Gordon R. Foxall, University of Strathclyde

"Characteristics of Adopters and Nonadopters of Alternative Residential Long-Distance Telephone Services"
William E. Warren, Northeast Louisiana University
C.L. Abercrombie, Memphis State University
Robert L. Berl, Memphis State University

"Investigating Differences in the Roles of Enduring and Instrumentally Involved Consumers in the Diffusion Process"
Meera Venkatraman, Boston University

Discussant: Greg Bonner, Villanova University

**SATURDAY, OCTOBER 10
10:30AM - NOON SESSIONS**

6.1 Special Session: Nonconscious and Automatic Information Processing

Chair: Christopher P. Puto, University of Michigan

"Subliminal Effects Which Do Not Replicate at Supraliminal Levels"
Robert Zajonc, University of Michigan
Sheila T. Murphy, University of Michigan

"Latent Schematic Processing of Television Commercials"
Francoise Jaffe, University of Michigan
John Sailors, Northwestern University

"Memory for Frequency: The Processing of Advertising Messages"
Wanda T. Wallace, Duke University
Lynn Hasher, Duke University

"Unseen Effects of Advertising: The Nonconscious Processing of Consumer Information"
Susan E. Heckler, University of Michigan
Christopher P. Puto, University of Michigan

6.2 Competitive Paper Session: Age-Related Issues in Consumer Behavior

Chair: Carole Macklin, University of Cincinnati

"Elderly Life Satisfaction and Television Viewership: An Exploratory Study"
Don R. Rahtz, College of William and Mary
M. Joseph Sirgy, Virginia Polytechnic Institute and State University
H. Lee Meadow, Bentley College

"Ideal Age Concepts: An Exploration"
Benny Barak, Hofstra University
Barbara Stern, Rutgers University
Stephen Gould, Rutgers University

"An Analysis of the Content and Organization of Children's Knowledge Structures"
Donna M. Klees, University of Pennsylvania
Jerry C. Olson, Pennsylvania State University
R. Dale Wilson, Michigan State University

Discussant: Catherine Cole, University of Iowa

6.3 Special Session: Findings from the Consumer Behavior Odyssey

(Session Continued)

6.4 Special Session: Anchoring and Adjustment Models of Consumer Judgment

Chair: Stephen Hoch, University of Chicago

"Anchoring and Adjustment Strategies: Concepts, Uses, and Abuses"
Robin M. Hogarth, University of Chicago

"Anchoring, Adjustment, and the Measurement of Preferences"
Eric J. Johnson, University of Pennsylvania

"Studying Naturally Occurring Judgment Anchors"
Stephen J. Hoch, University of Chicago

Discussant: John G. Lynch, University of Florida

6.5 Competitive Paper Session: Topics in Pricing

Chair: Richard Durand, University of Maryland

"The 'Value for Price' Concept: Relationships to Consumer Satisfaction"
M.A. Morganosky, University of Illinois

"An Exploratory Study of Price/Perceived-Quality Relationships Among Consumer Services"
Rose L. Johnson, Georgia State University
James J. Kellaris, Georgia State University

"Involvement and the Price Cue"
Judith Lynne Zaichkowsky, Simon Fraser University

Discussant: Akshay Rao, University of Minnesota

**SATURDAY, OCTOBER 10
NOON - 1:30PM
Luncheon
Award Presentations**

**SATURDAY, OCTOBER 10
1:45PM - 3:15PM**

7.1 Special Session: Behavioral Perspectives on the Economics of Information

Chair: Paul N. Bloom, University of North Carolina

"Economics, Information, and Consumer Behavior"

John E. Calfee, University of Maryland
Gary T. Ford, American University

"Psychological Perspectives on the Economics of Advertising"

John G. Lynch, University of Florida
Paul N. Bloom, University of North Carolina

"An Empirical Test of the Search, Experience and Credence Attributes Framework"

Gary T. Ford, American University
Darlene B. Smith, George Washington University
John L. Swasy, American University

"The Skeptical Consumer: Fact or Fiction"

John E. Calfee, University of Maryland
Debra J. Ringold, American University

"The Influence of Extrinsic Cues on Consumer Evaluations: Implications for Consumer Welfare and Public Policy"

Valarie A. Zeithaml, Duke University
Paul N. Bloom, University of North Carolina

"Successes and Failures of Information in Health Care Markets: Cases in Point"

Minette E. Drumwright, Harvard Business School
Nancy M. Kane, Harvard School of Public Health

Discussants: Howard Beales, Federal Trade Commission

Richard Schmalensee, MIT

7.2 Competitive Paper Session: Measurement Approaches in Consumer Research

Chair: Surendra N. Singh, University of Kansas

"Measurement Approaches for Consumer Behavior Constructs: A Multidimensional Perspective"

Jagdeep Singh, Case Western Reserve University

"Using the Repertory Grid to Assess the Complexity of Consumers' Cognitive Structures"

George M. Zinkhan, University of Pittsburgh
Abhijit Biswas, University of Houston

"Measuring the Meaning of Consumption Objects: An Empirical Investigation"
Robert E. Kleine, III, University of Cincinnati
Jerome B. Kernan, University of Cincinnati

Discussant: James Muncy, Texas Tech

7.3 Special Session: Extensions and Applications of Categorization Research

Chairs: Mita Sujan, Pennsylvania State University
Alice M. Tybout, Northwestern University

"Ignoring Irrelevant Information: The Roles of Visual Similarity and Consumer Expertise"
J. Wesley Hutchinson, University of Florida
Joseph W. Alba, University of Florida

"Age Differences in Product Categorization"
Deborah Roedder John, University of Minnesota

"Mood Effects on Categorization Tasks" A Cognitive Flexibility Hypothesis"
Noel M. Murray, Pennsylvania State University
Harish Sujan, Pennsylvania State University
Mita Sujan, Pennsylvania State University
Edward R. Hirt, Pennsylvania State University

"What Is It? and What of It?: The Role of Categorization in Judgment"
Laura Peracchio, Northwestern University
Alice M. Tybout, Northwestern University

Discussants:

John S. Carroll, MIT
Ann Beattie, Columbia University

7.4 Competitive Paper Session: Research on Involvement

Chair: Dena Cox, Georgia State University

"The Role of Involvement and Opinion Leadership in Consumer Word-of-Mouth: An Implicit Model Made Explicit"
~~Marsha L. Richins, University of Massachusetts~~
Teri Root-Shaffer, Louisiana State University

"A Comparison of Involvement Measures for the Purchase and Consumption of Pre-Recorded Music"
Marya J. Pucely, Florida State University
Richard Mizerski, Florida State University
Pamela Perrewé, Florida State University

"Separating Brand-Choice Involvement from Product Involvement Via Consumer Involvement Profiles"
Banwari Mittal, SUNY-Buffalo
Myung-Soo Lee, SUNY-Buffalo

Discussant: Sharon Beatty, University of Alabama

7.5 Special Session: Intergenerational Influences on Consumer Behavior

Chair: Terry L. Childers, University of Minnesota

"Intergenerational Influences in the Formation of Consumer Attitudes and Beliefs About the Marketplace: Mothers and Daughters"

Elizabeth Moore-Shay, University of Florida
Richard J. Lutz, University of Florida

"Intergenerational Determinants of Consumer Involvement: The Case of Financial Products"

Gilles Laurent, Centre HEC-ISA
Andre Babeau, Paris IX-Dauphine et CREP
Jean-Noel Kapferer, Centre HEC-ISA

"Methodological Issues in Studying Intergenerational Influences"

George P. Moschis, Georgia State University

Discussant: William Qualls, University of Michigan

7.6 Special Session: Language Strategies in Advertising

Chair: Karen Hunold, University of California-Berkeley

"Verbal Strategies for Product Presentation in Television Commercials"

Karen Hunold, University of California-Berkeley

"Hidden Information: The Meaning Beyond the Words"

Linda Coleman, University of Maryland

"How to Make a Claim 'Central': Using Syntax to Direct Cognitive Elaboration"

Trudy Kehret-Ward, University of California-Berkeley

Discussant: Rita Denny, Ruder, Finn & Rotman Public Relations

SATURDAY, OCTOBER 10
3:45PM - 5:15PM

8.1 Special Session: Behavioral Perspectives on the Economics of Information

(Session Continued)

8.2 Competitive Paper Session: Literature Reviews: Narratives, Content Analyses, and Meta-Analyses

Chair: Pat Murphy, University of Notre Dame

"Recent Developments in Research on Family Decisions"

Elizabeth S. Moore-Shay, University of Florida
William L. Wilkie, University of Florida

"Values and Issues in Consumer Research: A Content Analysis of ACR Presidential Addresses"

Susan Spiggle, University of Connecticut
Cathy Goodwin, University of Connecticut

"Meta Analysis of Involvement Research"
Carolyn L. Costley, University of North Carolina

Discussant: Ivan Ross, University of Minnesota

8.3 Special Session: Presentations by Ferber Award Winners

Chairs: James Bettman, Duke University
Harold Kassarjian, UCLA

"The Relationship Between Recall, Cognitive Responses, and Attitude: Effects of Delay and Context"
Amitava Chattopadhyay, McGill University

"The Moderation Effect of Prior Knowledge on Cue Utilization in Product Evaluation"
Akshay Rao, University of Minnesota
Kent Monroe, Virginia Polytechnic Institute and State University

8.4 Special Session: Psychological Aspects of Price: Implications for Consumer Choice Modeling

Chair: Russell Winer, Vanderbilt University

"The Formation of Temporal Buying Strategies in Dynamic Price Environments"
Robert J. Meyer, UCLA
Joao Assuncao, UCLA

"A Promotion-Induced Choice Restriction Model of Consumer Choice"
Leigh McAlister, University of Texas at Austin
Peter S. Fader, University of Pennsylvania

"Multi-Stage Models of Choice: A Rational Expectations Approach"
Russell S. Winer, Vanderbilt University

Discussant: Alan Sawyer, University of Florida

8.5 Competitive Paper Session: Perspectives on the Role of Imagery

Chair: Kevin Keller, Stanford University

"Processing by Attribute Versus Alternative: The Mediating Role of Dynamic Imagery and Prior Knowledge"
Ann L. McGill, New York University
Punam Anand, New York University

"Figurative Language in Services Advertising: The Nature and Uses of Imagery"
Barbara B. Stern, Rutgers University

"The Role of Individual Differences and Multiple Senses in Consumer Imagery Processing: Theoretical Perspectives"
Evelyn Gutman, Boston University

Discussant: John Rossiter, NSW Institute of Technology

8.6 Special Session: The Role of Attitude Toward the Ad as a Mediator of Advertising Effects

Chair: Douglas M. Stayman, University of Texas at Austin

"Specific Feeling Responses and the Mediating Role of Attitude Toward the Ad Over Repeated Exposures"

Douglas M. Stayman, University of Texas at Austin
David A. Aaker, University of California, Berkeley

"How Did that Ad Make You Feel?--A Question We Ought to Be Asking"

Marian Chapman Burke, Duke University
Julie A. Edell, Duke University

"Affective Response, Aad, and Abrand: A Test of Contingencies and Processes"

Rajeev Batra, Columbia University
Debra Stephens, University of Maryland

Discussant: Andrew A. Mitchell, University of Toronto

**SUNDAY, OCTOBER 11
8:30AM - 10:00AM SESSIONS**

9.1 Special Session: The Effects of Consumer Behavior on Buyer and Seller Feeling States

Chairs: Meryl Gardner, New York University
Ron Hill, The American University

"Effects of Impulse Purchases on Consumers' Affective States"

Meryl P. Gardner, New York University
Dennis W. Rook, DDB Needham

"Emotional Responses to Layout and Design"

Marcia H. Flicker, Fordham University
William C. Speer, J.C. Penney

"The Effects of Advertisements on Consumers' Mood States: An Interactive Perspective"

Ronald Paul Hill, The American University

"Salespeople's Feelings"

Harish Sujan, The Pennsylvania State University

"The Effects of Promotional Games on Participants' Moods and Resulting Information Processing Behavior"

James C. Ward, Arizona State University
Ronald Paul Hill, The American University
Meryl P. Gardner, New York University

"Development of a Set of Scales to Measure Affective Responses to Advertising"

Rajeev Batra, Columbia University

Discussants:

Doug Stayman, University of Texas
Linda Alwitt, Leo Burnett Co. William A. Cook

9.2 Competitive Paper Session: Conceptual and Methodological Issues in Information Search

Chair: Michelle Bunn, SUNY-Buffalo

"Effect of Information Accessibility in Choice Based on Internal Search"

Robert M. Schindler, University of Chicago

"The Relationship Between Prior Knowledge and External Search"

Narasimhan Srinivasan, University of Connecticut
Jagdish Agrawal, SUNY-Buffalo
Arun K. Jain, SUNY-Buffalo

"Keyword Recognition: A New Methodology for the Study of Information Seeking Behavior"

Julie L. Ozanne, Virginia Polytechnic Institute and State University

Discussant: George Zinkhan, University of Pittsburgh

9.3. Special Session: Network Analysis of Buyer Behavior

Chairs: Peter H. Reingen, Arizona State University
Jerome B. Kernan, University of Cincinnati

"Reviving the Concept of Exchange"

Jonathan K. Frenzen, University of Arizona

"Coalitions in Organization Buying: An Application of Network Analysis"

Julia M. Bristor, University of Western Ontario

"Opinion Leaders in Interpersonal Networks"

Peter H. Reingen, Arizona State University
Bruce Pilling, Arizona State University
Jacqueline Johnson Brown, Arizona State University

Discussant: Everett M. Rogers, University of Southern California

9.4 Competitive Paper Session: Couponing Effects in Consumer Behavior

Chair: Leonard Reid, University of Georgia

"Couponing Behaviors of the Market Maven: Profile of a Super Couponer"

Linda L. Price, University of Colorado
Lawrence F. Feick, University of Pittsburgh
Audrey Guskey-Federouch, University of Pittsburgh

"Consumers' Knowledge of Supermarket Prices: The Effects of Manufacturer and Retailer Promotions"

Thomas E. Buzas, University of Florida
Howard Marmorstein, University of Florida

"The Interaction of Coupons with Price and Store Promotions"

Caroline M. Henderson, Dartmouth College

Discussant: Peter Bennett, Pennsylvania State University

9.5 Competitive Paper Session: Research on Attribution Theory

Chair: Linda Golden, University of Texas at Austin

"The Role of Specific-Item Causal Dispersion in Attributional Focus and Confidence Determination"

Donald R. Lichtenstein, Louisiana State University

"Base Rate Information, Causal Inference, and Preference"

Frank R. Kardes, Massachusetts Institute of Technology

"Controlling with Consistency: An Initial Test of the Effects of Cue Patterns on Behavior and Attributions in a Purchasing Negotiation"

Randall L. Rose, University of South Carolina
Peter R. Dickson, The Ohio State University

Discussant: Stephen Gould, Rutgers University

**SUNDAY, OCTOBER 11
10:30AM - NOON SESSIONS**

10.1 Special Session: *The Effects of Consumers Behavior on Buyer and Seller Feeling States*

(Session continued)

10.2 Competitive Paper Session: *Consumer Choice and Variety*

Chair: Michael Solomon, Rutgers University

"The Formation of Consumer Choice Sets: A Longitudinal Investigation at the Product Class Level"
David B. Klenosky, Pennsylvania State University

"Shopping for Variety in Red Meat, Poultry, and Fish"
C.J. Hager, University of Georgia

"The Influence of Variety on the Demand for Bundles of Musical Performances"
William J. Havlena, Southern Methodist University
Susan L. Holak, University of Texas at Dallas

Discussant: D. Maheswaran, New York University

10.3 Special Session: *A Closer Look at Cognitive Theory: Ethnomethodological, Wittgensteinian and Symbolic Interactionist Perspectives*

Chair: Paul F. Anderson, Pennsylvania State University

"The Non-Cognitive Consumer"
Jeffrey P. Coulter, Boston University

"Are Consumers' Beliefs What We Think They Are? A Wittgensteinian Analysis"
Paul F. Anderson, Pennsylvania State University

"Motives, Social Reality, and the Symbolic Foundations of Behavior:
Clinton R. Sanders, University of Connecticut

Discussant: Peter Dickson, Ohio State University

10.4 Competitive Paper Session: *Price-Related Effects on Consumer Behavior*

Chair: Diane H. Schmalensee, Marketing Science Institute

"Buyer Market Price Knowledge Influence on Acceptable Price Range and Price Limits"
Rustan Kosenko, Ohio University
Donald Rahtz, College of William and Mary

"Advertised Comparative Price Effects on Buyer Perceptions and Behavior: A Model and Empirical Test"
Joel E. Urbany, University of South Carolina
William O. Bearden, University of South Carolina
Dan C. Weilbaker, Bowling Green State University

"Consumer Information, Competitive Rivalry, and Price Setting: When Ignorance Isn't Bliss"
Joel E. Urbany, University of South Carolina
Peter R. Dickson, Ohio State University

"Effect of Odd Pricing on Choice of Items from a Menu"
Robert M. Schindler, University of Chicago
Lori S. Warren, University of Chicago

10.5 Competitive Paper Session: *Special Research Techniques in Buyer Behavior*

Chair: Elizabeth Hirschman, New York University

"Theoretical Underpinnings for the Use of Group Interviews in Consumer Research"
Edward F. McQuarrie, Santa Clara University
Shelby H. McIntyre, Santa Clara University

"Degrees of Freedom" in Case Research on Behavioral Theories of Group Buying Behavior"
Elizabeth J. Wilson, Penn State University
David T. Wilson, Penn State University

"Respondent Anxiety Reduction with the Randomized Response Technique"
Donald E. Stem, Jr, Washington State University
Carl S. Bozman, Washington State University

Discussant: Susan Spiggle, University of Connecticut

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Processes of Adaptivity in Decision Making

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In my opinion, one of the most fascinating aspects of human behavior is individuals' ability to adapt to a wide variety of environmental conditions. At a macro level, such flexibility in early man (e.g., willingness to eat a variety of foods) may have played a major role in the survival of the species (Calvin, 1986). However, at a more micro level, individuals also learn to adapt. Individuals appear to fit their behavior to their environments almost effortlessly and with exquisite precision. Adaptivity is viewed as a mark of intelligence; in fact, failure to adapt often stands out as unusual. Despite the importance and prevalence of the *phenomenon* of adaptivity, the *process* of adaptation is not well understood or researched. Amazingly little is known about how adaptation occurs, yet how people adapt is a major issue of self-regulation of behavior (Mischel, 1973). Through what process do individuals assess the properties of environments, monitor their behavior, gauge the degree of fit, and ultimately adapt?

I wish to address this broad issue of the processes of adaptation, with particular emphasis on adaptivity in decision making. In doing so, I will attempt to examine both conceptual issues and needed areas of research. These ideas flow from work on adaptivity I have done jointly over the past several years with John Payne and Eric Johnson, and they have had an extensive influence on these notions.

I believe that further understanding of the process of adaptivity is very important for research on consumer decision making. For example, for more than ten years research on information overload (e.g., Jacoby, Speller, and Kohn 1974; Staelin and Payne 1976, Malhotra 1982; Keller and Staelin 1987) has attempted to document how consumers respond to differing amounts of information. There has been a great deal of disagreement as to the meaning of these data, however (e.g., Russo 1974; Wilkie 1974, Jacoby 1984). No one has directly tried to address the *process* by which consumers adapt to information load. It is my contention that examining this process could lead to important new insights into responses to information load and other areas of research on contingent consumer decision making.

An Accuracy/Effort Approach to Adaptivity

One approach to adaptivity in decision making is to frame the issue as how one decides to decide (Beach and Mitchell 1978; Russo and Doshier 1983; Johnson and Payne 1985; Payne, Bettman, and Johnson 1988). This approach has recently become of great interest to cognitive psychologists in general (e.g., Siegler 1986; Reder 1987). The basic approach taken is to argue that decision makers trade off accuracy and effort considerations. In deciding how to decide, a decision maker is thought to consider the costs of various strategies (mainly the effort involved in executing them) and the benefits of the strategies (how likely the strategy is to result in one's choosing the best alternative) for the particular environment. The most straightforward and simple conceptualization of such an approach is that decision makers have a repertoire of strategies whose accuracy and required effort can be ascertained or are known for a particular task environment. Then that strategy is selected which best meets the individual's

desired trade-off between accuracy and effort. Adaptivity occurs because accuracy, effort, and the desired trade-off may vary over different decision environments.

In the course of our research on this general approach, it has become clear that this simple view is too confining. While we still espouse an accuracy/effort viewpoint and the idea of multiple strategy use, we have begun to consider several broader concerns which lead to a more complex view of that framework.

The essence of adaptivity, as noted above, is adjustment to environmental conditions (Payne 1982). Such adjustment involves several components, of which two will be the focus of further attention in this address: assessing the nature of the environment and evaluating how well one is doing. The accuracy/effort view presented above does not specify these more basic processes in any detail. How one determines the costs or benefits of a strategy is not specified, for example.

How sensitive individuals are to the nature of the environment and how well they can assess that environment are important questions. If one is to actively adjust to a particular set of circumstances, one must be able to notice both regularities and unusual circumstances in that setting. The simple accuracy/effort approach outlined above implies that individuals should be able to characterize the properties of different environments which might affect decision strategies, but how this is done is not considered. In addition, not all adaptivity may be active. Environments place constraints on behavior, so that some behaviors may simply not be possible under some conditions. For example, a complete examination of all available information may not be possible under time pressure. Hence, the role of the environment and individuals' sensitivity to it raises several broad and fascinating questions.

In order to adapt, individuals must determine, even if roughly, how well they are doing. The notion of adjustment via accuracy/effort tradeoffs implies that one must be able to generate some vague ideas about the degree of effort and accuracy characterizing one's decision process. Although current accuracy/effort approaches do not consider this process in any detail, several very interesting issues arise in considering how such information might be generated.

The focus of this address will be on the two areas of adaptive behavior raised briefly above: assessing the environment, and how one assesses how well one is doing. Following a discussion of these issues, the degree to which decision makers adapt successfully is considered.

The Environment and Adaptivity

One process underlying adaptivity is assessing the properties of the task environment. The general question is what decision makers notice about decision environments. For example, whether decision makers perceive covariation, relationships among various alternatives, or other aspects of the choice setting could be considered. One approach to this broad issue is the notion of editing processes. The implications of a constructive approach (Bettman 1979) to editing will be developed.

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Editing processes have been proposed as an important component of choice (Kahneman and Tversky 1979; Goldstein and Einhorn 1987), with individuals supposedly editing choice problems into simpler form before choosing. Editing could involve dropping outcomes which are identical across alternatives, eliminating some alternatives, or eliminating redundant attributes, for example. To the extent that editing can simplify choice, it is potentially a major component of adaptivity to different choice environments.

Whereas Kahneman and Tversky (1979) and Goldstein and Einhorn (1987) argue that editing processes come first, with alternatives edited and then simplified options evaluated, we argue instead that editing is opportunistic (Hayes-Roth and Hayes-Roth 1979). Editing may occur throughout a choice whenever individuals notice some structure in the choice environment that can be exploited. Hence, editing can be a bottom-up process, driven by the data, as well as a priori or top-down. Editing processes may be involved earlier in the decision process the more experience one has in a given choice environment (Johnson and Russo 1984).

Editing is probably also adaptive, in that the particular editing operations used may be a function of the immediately preceding processing. That is, different types of processing will leave different traces in short-term memory, and these traces will be more or less compatible with different editing operations. For example, processing a pair of alternatives one attribute at a time and noticing how one compares to the other on each attribute would enable the detection of dominance, whereas processing each alternative in its entirety without direct comparison to the other would discourage such detection. Hence, different choice strategies enable different editing operations. Therefore, different choice environment properties will affect editing because they affect processing. This is likely to be particularly true for the effects of information display. Slovic (1972) has argued for a principle of *concreteness*, that individuals tend to use information in the form in which it is displayed. To the extent this is true, display should exert a strong influence on editing processes by encouraging or discouraging various types of processing.

This view of editing is quite flexible and implies a different conceptualization of strategy usage than the simple view outlined above. Rather than a priori selection from a repertoire of strategies, a very top-down approach, the opportunistic view of editing implies a more constructive view of choice (Bettman 1979; Bettman and Zins 1977). This view implies that people develop simplifications and strategies as they progress in a decision process, rather than invoking them a priori. In addition, the opportunistic view is much more general than the current depiction of phased processes, which argues that one strategy is used first (such as EBA to eliminate alternatives) and another (usually compensatory) is used on the remaining alternatives. Our view of editing includes this as a special case.

According to our view, editing is a crucial component of adaptivity, since which regularities (if any) are noted and exploited can profoundly affect the course of the decision process. If strategies are constructed instead of selected, the sequence of editing operations will have a major impact on the resultant process (Tversky, Sattath, and Slovic 1987).

Amazingly, however, almost nothing is known about editing processes. Such research topics as what

features of a decision task are noticed and exploited and how this changes with display format would seem both natural and important. In general, studies of the determinants of focus of attention in decision problems could be extremely valuable.

The above discussion has focused on a decision maker actively noting and consciously adapting to an environment. However, adaptivity will not necessarily always be active. To the extent a choice environment is severely constrained, a very limited set of approaches may be possible. For example, under very severe time pressure, only strategies which look at a small subset of the available information may even be possible. In effect the environment selects out non-feasible approaches. Within the set of feasible strategies, the individual may still, of course, rely on accuracy/effort considerations in developing his or her preferred approach.

The individual's focus of attention may also be less actively controlled by the individual than implied above. Attention may be much more under the control of features of the choice environment in low involvement decisions, for example, with the decision maker exerting more control under high involvement.

Assessing How Well One is Doing

Individuals could make trade-offs involving accuracy and effort in several ways. In some situations, individuals might be given explicit feedback about accuracy and effort. Given such feedback, decision makers could then make conscious accuracy/effort trade-offs. This view externalizes the problem of assessing how well one is doing by assuming that information about accuracy and effort is provided and hence need not be generated. While such a view might characterize some laboratory situations, it does not seem particularly generalizable.

Most common decision situations do not explicitly provide clear feedback to the decision maker (Einhorn 1980). Rather, individuals must somehow generate their own feedback about accuracy and effort. This process is not too difficult to imagine for effort. In the course of making a decision, individuals can generate process feedback (Anzai and Simon 1979). That is, a decision maker can probably ascertain fairly well how effortful a particular decision was. Such indicators as elapsed time and self-rated effort are readily available.

Self-generation of accuracy feedback is not quite so obvious. If the decision maker immediately experienced the outcome of the choice, some indication of the goodness of the decision would be available. Such self-generated accuracy feedback could then be used to modify one's behavior, if necessary, the next time a similar decision was made. However, there are other types of choices where feedback about outcomes is not readily available. In some situations, multiple choices must be made where experiencing the outcomes or receiving feedback about them is deferred (e.g., purchasing several types of wine for a dinner party or buying gifts). In other cases, one may not feel confident about judging the goodness of an outcome (e.g., what effects a particular health food is having). Finally, it may often be difficult for one to assess how relatively good an outcome is without some basis for comparison. Since there are a variety of such circumstances where feedback about outcomes is not available, it would seem that an additional process for self-generation of accuracy feedback is necessary.

We propose a process for assessing how well one is doing that seems generally applicable in most decision situations. We assume that individuals have general knowledge of the properties of a reasonable strategy. For example, decision makers might believe that in general one should first look at the most important information for all alternatives, and then look at other information as desired or as time allows. Then, during the course of making a decision, the individual could not only ascertain the effort required, but could also determine how closely their decision process resembled their notion of what a "good" strategy should entail. In the absence of environmental constraints, the match between the strategy used and notions of a "good" strategy should presumably be close and the accuracy assessment would be "high". However, if there were severe environmental constraint (e.g. great time pressure), the individual may feel that the strategy, either as executed or while executing, did not match their notion of a reasonable strategy. For example, important information may not have been examined because time ran out. The individual could then adjust his or her decision process to be more in line with their notion of strategy reasonableness. This adjustment could be made either on-line or the next time such a decision was faced. Hence, the decision maker potentially has access to a fairly rich data base about the course of his or her decision process, and such process feedback can lead to self-generated information about both effort and accuracy.

The decision maker could use such self-generated information in several ways. As noted above, an individual could adjust his or her process in the midst of a decision if things were not going well. Alternatively, the individual might decide to adjust his or her approach the next time the same or a related decision occurred. Note that there are two general processes of adjustment based on accuracy implied above: changes based upon the outcomes of particular decisions, and changes based upon goodness of the process. The latter kind of adjustment, that based upon process, may have broader effects on adaptivity across situations, since adjustments based upon notions of a "good" process may be easier to generalize.

Reder (1987) has also recently considered strategy changes without explicit feedback. She proposes a "feeling of knowing" process which is related to the ideas above. That is, she argues that people may develop strategies that are adaptive to different decision environments by trying to minimize effort while maintaining a feeling of knowing that a reasonable decision is being made.

These notions imply several potential areas for research. One such area is directly studying how properties of decision environments are related to individuals' ideas about reasonable strategies for those environments. A second area is to study self-reports of accuracy or feeling of knowing and see how well-calibrated such self-reports are and how they are affected by decision task properties.

Degree of Adaptivity

The discussions above imply several sorts of knowledge that decision makers might have that would foster adaptivity: (1) Knowing the characteristics of a "reasonable" decision strategy, both generally and with respect to specific decision environments; (2) Information about the relative effort required for various decisions; (3) Rules of thumb for editing operations to

simplify choice; (4) Pieces or components of decision processes that could be put together constructively to form an overall approach to a decision. Such knowledge would presumably be more extensive the more experience one had in a decision domain. It is closely related to the notion of tacit knowledge developed by Wagner and Sternberg (1985), in that it is knowledge which is not usually formally taught but is extremely helpful in real-world pursuits. One implication, of course, is that such components of tacit knowledge relating to adaptivity might be very fruitful targets for consumer education. I would argue that investigations of such knowledge and the processes underlying adaptivity form an important agenda for research on consumer decision making. Adaptivity is a central process, and understanding how individuals adapt is crucial.

Finally, the issue of how well individuals can adapt is implicit in much of the above. The literature is replete with biases, errors, and other horrors to which decision makers seem surprisingly susceptible. One might be led to believe that discussing adaptivity is useless because people will "adapt" inefficiently in any case. In our research thus far, however, that has not been the case. In studies of adaptation to time pressure and dispersion in the probabilities of the possible outcomes, decision makers were quite adaptive in directions representing efficient accuracy/effort tradeoffs (Payne, Bettman, and Johnson 1988). Similar results have been found for covariation assessments (Bettman, John, and Scott 1986). Thus, our results suggest that individuals can adapt in ways which are appropriate given fairly subtle changes in the structure of the decision problems they face. Decision makers appear to be flexible and creative in coping with the variety of tasks they face. Individuals may not be *optimal* processors of information, but they are often *intelligent* processors.

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Values and Issues in the Field of Consumer Research: A Content Analysis of ACR Presidential Addresses

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Abstract

A content analysis of ACR presidential addresses using quantitative and qualitative procedures revealed that their implicit value content varied and formed three clusters. These clusters were related to the major issue differentiating the addresses--those focusing upon the discipline and those focusing upon the organization. An explanation for these findings and their implications are discussed.

Introduction

The Association for Consumer Research, like other scientific organizations, has its mission and long term goals defined by charter. Organizational values that are subject to cultural change (Namenwirth 1987) shape its direction, form and resource commitments. Whether values determine behavior is a debatable question. However, the articulation of values and discussion of issues in an organization provides us with insights about its idealizations, its goals, and its ideological commitments. Namenwirth (1987) argues that organizational values may be identified by analyzing the addresses delivered by presidents to the membership. This paper analyzes fourteen addresses delivered by ACR Presidents and identifies values that reflect the organization's culture and the recurring issues and themes.

Background

Namenwirth (1987) analyzed changing values of three long-lived scientific organizations, the American Chemical Society, the American Association for the Advancement of Science, and the American Economic Association. Using an automated, quantitative content analysis, he analyzed presidential addresses of these organizations in three selected time periods from 1900 to 1970. Presidential addresses, he argued, are appropriate documents for such an analysis for three reasons. (1) They appear at yearly intervals. (2) They are delivered to a large audience and "thus must be of general, rather than arcane interest." (3) Delivered by departing presidents, typically centrally connected to the field, they are likely to reflect fundamental issues and concerns.

Namenwirth constructed a profile for each document analyzed by counting word frequencies assigned to one or another category defined by a value dictionary. He factor analyzed the resulting categories and obtained five factors, representing issues or dilemmas that differentiated the presidential addresses over time and across scientific organizations.

These five factors represent continua with bipolar positions. They are anchored by contrasting issue themes. Namenwirth argued that they are latent issues or controversies, not explicitly articulated as the major controversial issues of the moment upon which the speaker takes a position. Rather, they are implicit, "potentially divisive issues, consisting of two counter-views." These five factors form the conceptual foundation of our quantitative content analysis:

VALUE ORIENTATION--Value laden vs. Value neutral¹:

This dimension raises the question of whether the address commits itself to values, or demonstrates an absence of value concerns by employing descriptive and analytic discourse and technical scientific language.

SCIENTIFIC ORIENTATION -- Applied vs. Theoretical:

This dimension addresses the question of whether scientific inquiry should be guided by questions of utility and application external to the discipline, or by questions of truth and the pursuit of knowledge.

ORGANIZATIONAL SCOPE -- Cosmopolitan vs.

Parochial: This dimension addresses the issue of whether the organization should concern itself with problems at the border of the discipline and the surrounding world, or with its internal affairs.

SCIENTIFIC PROGRESS -- Meta-theory vs. Methods:

This dimension concerns the question of what produces scientific progress--speculation and theoretical elaboration, or development of methods and instruments.

ORDER ORIENTATION -- Liberty vs. Regulation:

This dimension addresses the issue of whether social order is seen as the product of liberty, competition, and individual activities, or authoritative planning, regulation, and centralized control. This latter factor was dropped from the present analysis because of the virtual lack of content concerning it found in ACR presidential addresses.

Research Design

Data

The data for this analysis include the fourteen ACR presidential addresses delivered between 1972 and 1986, commencing with the institution of formal presidential addresses. It does not include the addresses delivered by Engel and Perloff as Chairmen of the Advisory Council in 1970 and 1971. Also, Wells did not deliver an address in 1974. Cohen's address in 1972 was published in the ACR Newsletter, the remaining ones in *Advances in Consumer Research*.

The Quantitative Analysis

Because the computer automated content analysis program, using words as the basic datum of inquiry, was not available at the time of the analysis, we operationalized Namenwirth's five factors in the following manner. Paragraphs were defined as the basic unit of data, and a content coding scheme was developed that reflected the Namenwirth (1987) factor dilemmas².

The data collected using Namenwirth's dimensions was used to develop a profile of each address. The profiles were constructed as follows:

1. The content analysis was conducted by both authors independently. Every paragraph of each speech was coded to indicate the presence or absence of each

¹ Following Namenwirth (1987), factors are written in capital letters and poles are written with the first letter capitalized.

² The content coding scheme is available by request from authors.

pole of the 5 bipolar categories. An acceptable intercoder reliability rate of 87% (Kassarjian 1977) was achieved. Coding disagreements were resolved by mutual agreement.

2. For each speech, the percentage of paragraphs containing a given bipolar orientation was computed. Thus, for the category VALUE ORIENTATION, a given speech would be scored 30% Value-laden if 30% of its paragraphs contained value-laden material and 8% Value-neutral if 8% of its paragraphs contained value-neutral material. For any pole, scores could range from 0% to 100%.

3. Speeches were profiled based on percentages of paragraphs utilizing content representing each bipolar category.

4. Profiles were submitted to a cluster analysis using Ward's method (Punj and Stewart 1983) to identify similarities in value profiles of the addresses along the four value dimensions, VALUE ORIENTATION, SCIENTIFIC ORIENTATION, ORGANIZATIONAL SCOPE, and SCIENTIFIC PROGRESS. (See the Appendix for graphic presentation of profiles.)

Results

Three clusters were identified. Cluster 1 (Organizational Dynamics) includes the addresses of Cohen (1971)³ Pratt (1973), Gardner (1976), Bernhardt (1983), and Sheth (1984). They are characterized by high relative frequency of parochial content on the ORGANIZATIONAL SCOPE dimension, a relative absence of attention to the SCIENTIFIC PROGRESS dimension, moderate incorporation of Value Laden content, and varying concern with the SCIENTIFIC ORIENTATION dimension. Illustrative quotes from Cluster 1 are:

"Why was ACR started in the first place? Viable organizations or institutions are not born in a vacuum. While the need for an organization must be perceived and implemented by individuals, motives underlying such implementation most often result from a recognition that there is a purpose to be served that is not being effectively met by existing institutions." (Pratt 1973)

"Many of us consider ACR the primary organization with which we identify. We're associated with a very prestigious journal. The conference itself and the proceedings are of the highest quality and I think are generally perceived as such. I think we have been successful in advancing the field substantially in many, many areas." (Bernhardt 1983).

Cluster 2 (Application of Theory) contains the speeches of Hunt (1979) and Kernan (1978). They are similar in their frequent use of Value Laden content and strong Applied orientation. They address the ORGANIZATIONAL SCOPE dimension only briefly and fall on the Parochial side when they do so. Finally, they make reference to the Applied pole of the SCIENTIFIC ORIENTATION dimension more frequently than any other addresses, but incorporate a moderate number of references to the Theoretical pole. The following quote by Hunt (1979) represents this cluster.

"Where we have strong points of view based on our professional expertise, I feel we have an obligation to enter the public arena to do all that we can to see that our point of view prevails."

Cluster 3 contains the addresses of Jacoby (1975), Kassarjian (1977), Wilkie (1980), Olson (1981), Zaltman

(1982), Wright (1985), and Belk (1986). The cluster is generally defined by its relative lack of attention to the ORGANIZATIONAL SCOPE dimension. The cluster solution suggests that it is composed of two subclusters. Subcluster A (Development of Knowledge) contains the addresses of Jacoby (1975), Kassarjian (1977), Wilkie (1980), and Belk (1986). The content of these speeches is similar in their substantial use of Value Laden material and references to the Theoretical pole of the SCIENTIFIC ORIENTATION dimension. Jacoby's address (1975) fits least well with this subcluster in that it shows fewer references to the Theoretical pole of the SCIENTIFIC ORIENTATION dimension, and it is the one address out of the fourteen that makes frequent references to the Methodological pole of the SCIENTIFIC PROGRESS dimension. The following quotes illustrate this subcluster.

"...a personal choice to attempt to contribute to knowledge is not an empty or minor gesture. The first perspective which I encountered in beginning to address the question was a realization that, by opting to assert a goal of 'adding to knowledge,' we have elected to join the thousands of men and women who have also sought this goal, and who have gone before us." (Wilkie 1980)

"Besides the day-to-day choices of a consumer, there are the decade-to- decade consumption choices made by societies. There is much that is of great human consequence in consumption, and yet we have for the most part wasted our talents on the dog-food level of things." (Belk 1986)

Subcluster B (Progress through Theory) is composed of the addresses of Olson (1981), Zaltman (1982), and Wright (1985). The similarities in their addresses arise from considerable content about the Metatheoretical pole of the SCIENTIFIC PROGRESS dimension and the Theoretical pole of the SCIENTIFIC ORIENTATION dimension. Wright's address differs from the other two in this subcluster in its relative lack of Value Laden content, compared to the moderate incorporation of Value Laden content by Zaltman and Olson. Quotes from Olson's (1981) and Zaltman's (1982) addresses typify this subcluster.

"To have a viable science of consumer behavior, we must have viable theories of consumer behavior. Thus, doing consumer behavior science involves working with theories -- developing, testing, modifying, and improving theories of consumer behavior phenomena." (Olson)

"...the quality of our research primarily follows the quality of our ideas and concepts. This is an assertion that some of you may challenge. However, I trust no one would dispute the general importance of concept development. I then observe that while we have not done at all badly with our current ideas we may soon be depleting most of what they have to offer." (Zaltman).

The three clusters that emerged in the quantitative content analysis utilizing Namenwirth's categories do not show a simple, linear relationship to the dimension of time. That is, earlier and later speeches are found in the first and third clusters. However, the first cluster contains a disproportionate number of speeches in the early period, and the third cluster a disproportionate number of speeches in the later period. The second cluster contains two addresses that are temporally adjacent and represent the approximate mid-point in time of the life of ACR. The time span covered by these addresses is far too short to allow identification of trends. However, the temporal

³ Dates following addresses are the years during which the address was delivered.

pattern suggested by the clusters suggests that central concerns and value positions may shift as the organization becomes established and gains recognition and acceptance.

The following analysis supplements the preceding one. The search for recurring themes, issues, and positions using an inductive, qualitative analysis revealed similarities to that of the quantitative, deductive analysis and also uncovered trends that were not revealed by the five categories suggested by Namenwirth.

Themes, Metaphors, and Definition of the Discipline

The Organization and the Discipline

All but one of the fourteen speeches can be classified into two major categories-- the organization oriented and the discipline/research oriented. Only Hunt's speech (1979), discussing pragmatic and ethical issues of the expert witness, fails to fit into these two broad categories.

The organization oriented speeches, which entirely comprise Cluster 1, focus on what ACR as an organization can do to help members and improve research. Membership growth and composition are key issues. Some of these speeches (notably Sheth 1984, Gardner 1976, and Cohen 1972) address issues in the field of consumer behavior. However, their primary focus is directed at ACR's role in improving research by facilitating interdisciplinary connections (Gardner 1976 and Cohen 1972), setting standards (Cohen 1972 and Sheth 1984), and encouraging broader research interests (Sheth 1984). Pratt (1973), Gardner (1976), and Bernhardt (1983) expound upon the history, present status, and future of ACR as an organization.

The other eight speeches, which comprise Cluster 3 and include Kernan's address, focus on the discipline of consumer behavior, pointing to its shortcomings and arguing for improvements. ACR is mentioned only in passing and, in some speeches, not at all (Wright 1985, Belk 1986). Jacoby (1975) and Wilkie (1980) accept the prevailing research paradigm and insist on the need to raise the quality of consumer behavior research. Their solutions implore consumer researchers to make a greater commitment to and use of the canons of traditional science. In a similar vein, Kassarian (1977) argues that attributing less involvement to the consumer and working towards simpler explanations will provide improvements to the field.

In contrast, Kernan (1978), Olson (1981), Zaltman (1982), Wright (1985), and Belk (1986) challenge the traditional views of theory and research and advocate novel perspectives whose adoption is seen as beneficial for improving the field. Kernan (1978) and Wright (1985) propose that the investigation of everyday, ordinary marketplace events involving persuasion attempts (e.g., low balling and consumers' intuitive theories) can provide the field with a needed shot of relevance and excitement. Olson (1981) and Zaltman (1982) argue for innovative theoretical approaches that encourage theory and concept development in the field as opposed to theory borrowing and theory testing. Belk (1986) invites consumer researchers to include a macro perspective that shifts research concerns to the impact that marketing activities and consumption choices have upon human well being.

The organization oriented speeches suggest that ACR can play at least a facilitating role in improving research quality. The discipline/research oriented

speeches do not identify any institutional structures that can contribute to their goals, although Kernan (1978) makes a passing reference to MSI's role in marketing. These latter speeches address an audience that is seen as well trained and employ moral suasion (Wilkie 1980), or intellectual suasion to enjoin them to rise to the presidential challenge. Thus, the discipline-oriented speeches focus on output, rather than input or process concerns.

Consumer Behavior as a Distinct Discipline

Six past presidents addressed the status of consumer behavior as a distinct discipline, particularly in relation to marketing, social psychology, and other fields recognized as independent areas. Kassarian (1977), Wright (1985), and Belk (1986) argue explicitly for the distinct nature of the field by pointing to the uniqueness of the phenomena that consumer researchers should be studying. For Kassarian it is "the thousands of insignificant and trivial [consumer] decisions in the world." For Wright it is marketplace gamesmanship and for Belk it is the impact of consuming decisions on society and human well being--"the relationship between consumer behavior and the rest of life."

Similarly, Jacoby (1975) argues that consumer behavior is "independent of any disciplinary orientation" as it is a "fundamental form of human behavior" that exists independently of the formal disciplinary organization investigating it. Gardner (1976) distinguishes consumer behavior from the field of marketing and points to its interdisciplinary foundations. He argues that the field's distinctiveness is conferred by its focus on the consumer in market relationships, regardless of the academic rubric under which investigation occurs. While Jacoby and Gardner suggest that specialists in such fields as psychology and sociology can be considered consumer researchers, Olson (1981) argues that consumer behavior will become a "science" only as the field develops its own theories rather than borrowing from other disciplines.

In summary, there appears to be a consensus that consumer behavior as a field of study can be differentiated from such fields as social psychology, sociology or even marketing. However, disagreement exists as to whether the theoretical orientation of the field is sufficiently developed to allow its consideration as a truly independent discipline.

Interdisciplinary Nature of Consumer Behavior

A number of the speeches make reference to the need for consumer behavior researchers to draw on a variety of disciplines. Cohen (1972) suggests that meetings represent an opportunity for members to interact with individuals from other disciplines. He urges members to develop a "broader approach" to consumer problems. Pratt (1973) points to the interdisciplinary mission of ACR. Gardner (1976) identifies "roots" of consumer research in several disciplines, including economics. As does Cohen, he advocates ACR's attraction of researchers from all fields, but sees the need for ACR to be "pre-eminent" before other researchers will join. Wilkie (1980) not only ties interdisciplinary relationships to ACR's purpose, but also identifies specific "basic disciplines" whose "mastery" may be a prerequisite for contributing to consumer research. Sheth (1984) also urges researchers to "learn new disciplines" such as resource management, as well as the "traditional" psychology-based disciplines. In summary,

presidential speeches have endorsed interdisciplinary contact and even recommended specific non-marketing disciplines for researchers.

The Consumer Perspective

Three past ACR Presidents suggest that the consumer's view of marketing may differ substantially from the marketer's. Although this theme occurs in only three speeches, it is worth noting because these three speeches deal with the issue fairly extensively. Wright (1985) offers the most complete treatment, devoting his entire speech to what he calls a "schemer schema," the notion that consumers expect marketers to follow certain techniques and therefore discount information received through marketing sources. Wright argues that consumer researchers have an opportunity to make a significant intellectual mark by investigating these intuitive consumer understandings. Kassarian (1977) and Belk (1986) question the importance of consumption in the consumer's life: the centrality of consumption activity to consumer research, they suggest, does not necessarily reflect a similar focus in the subjects being studied. Kassarian suggests that we have "projected" our sense of importance about consumer goods purchases onto the consumer whose world "is mostly full of insignificant decisions and unimportant solutions."

Public Policy

The contribution of consumer research to public policy is mentioned briefly and in general terms. An exception is Pratt (1973) who discusses insights on substance abuse available from consumer research. Cohen (1973) suggests the importance of "consumer welfare;" Jacoby (1975) indicates a need for researching "social issues;" Belk (1986) urges an exploration of "macro issues" of fundamental significance to humanity; and Hunt (1979) certainly makes reference to public policy in his discussion of the expert witness. Generally speaking, public policy concerns are not a substantial focus of ACR presidential addresses.

Human Growth as Metaphor for ACR

No fewer than five ACR presidents chose human growth as a metaphor for ACR's growth and development. Pratt (1972) writes, "As organizations grow, ACR is still in diapers," and refers later to the organization that was "born." Cohen (1973) says ACR has been "the new kid on the block," but at his speech, "the infant begins to grow to maturity." Gardner (1976) refers to "birth" and "maturity" of the field. Kassarian (1977) writes that JCR had been "conceived" and would soon be "born" and paraphrases Pratt's depiction of ACR as "a fledgling adolescent." Finally, Sheth (1984) speaks of ACR's "midlife crisis."

This repeated comparison with human growth suggests the strong involvement of past presidents with the organization and related institutions. The choice of a metaphor of human growth, rather than the product life cycle metaphor familiar to all marketers, suggests also that the presidents view ACR as a life form, rather than a product which exists independently of its ownership.

Omitted Themes

Consumer Behavior Education

Virtually all academic ACR members engage in some teaching, and a number of government and industry members serve as adjunct faculty. A large percentage of ACR members can be expected to have taken marketing

research and consumer behavior courses. The content and quality of these courses can influence career choices, as well as an individual's ability to engage in high-quality research. The only reference to teaching or coursework comes in the form of an anecdote by Wright (1985). The omission of references to education and professional socialization (excepting Wilkie 1980) is consistent with the explicit articulation of output concerns identified in discipline-oriented speeches.

The External Environment

During the decade and a half of ACR's existence a number of demographic, political, social, and economic events occurred that affected aggregate consumption patterns and produced new consumer trends--the Arab oil embargo, economic deregulation, maturing of the baby boom--to name a few. Noticeably absent from ACR Presidential addresses are references to such events. An exception is Pratt (1973) who discusses at length the specific macro-environmental circumstances that resulted in the need for an organization such as ACR--mass affluence, consumer power, and the informational needs generated by them. Belk (1986) discusses the significance of considering consumption from a macro perspective, but does not refer to specific, concrete macro events. The general absence of concern with the macro environment is consistent with the lack of content on the Cosmopolitan pole of the ORGANIZATIONAL SCOPE dimension.

Summary and Conclusion

A study of ACR presidential addresses has identified certain recurring themes: the nature of the consumer behavior field as a distinct discipline; the relation of this discipline to other fields of research; the need to improve the quality of consumer research; the role of ACR in supporting the professional activities of its members; and the status and future of ACR as an organization.

The theme chosen by an individual ACR President is related to the value positions that are implicitly articulated in the addresses and described in the quantitative analysis. A classification of speeches by thematic content closely resembles the classification by value positions as presented in the cluster analysis.

In addition to these dominant themes, common value positions among the speeches can be identified. The speeches collectively indicate little concern with the Value Neutral (of the VALUE ORIENTATION dimension), the Methodological (of the SCIENTIFIC PROGRESS dimension), and Cosmopolitan (of the ORGANIZATIONAL SCOPE dimension) poles. In other words, the presidential addresses paid minimal attention to other institutions and external forces, did not view methodological improvements as the key route for the advancement of the field, and tended to articulate value positions.

The lack of attention to the Cosmopolitan pole may be explained by the dominant micro perspective of the discipline and the consequent failure to raise macro issues when formulating research questions--a concern raised by Belk (1986). Concern with the Theoretical, rather than Methodological pole of the SCIENTIFIC PROGRESS dimension, may reflect a concern with establishing the field as a separate discipline, apart from marketing and psychology. Concern with the theoretical framework can be expected within a field that is questioning its disciplinary boundaries. However, the

focus on output of members, rather than concern with such inputs as training and organizational support, suggests an assumption that members are adequately trained in methodology and supported in carrying it out. The concern is that methodology be applied to well-constructed theories rather than developed for its own sake.

The lack of attention to the ORDER ORIENTATION dimension mirrors the cursory treatment given to public policy issues. It is somewhat surprising that references to this dimension are lacking. One might expect the social scientific branch of marketing to refer to the marketplace and its dynamics (which represents the quintessential structure of the Liberty pole) frequently. References to the marketplace are notably infrequent in ACR presidential speeches.

Finally, the considerable amount of Value Laden content may reflect cultural dynamics generated external to the discipline. Namenwirth found similarities in value-laden patterns among the three organizations that he studied. He interpreted this result as indicating that the agent of change was external to each of the fields and thus societal wide. A transition to Value Laden content may be occurring in other, older scientific organizations.

On the other hand, in this organization, the Value Laden content may reflect the normative expectations of these addresses: they are expected to be personal statements about the organization and the field, rather than scientific treatises (Gardner 1976 and Kassarian 1977). Several ACR presidents tried to establish the uniqueness of their speeches with references to differences from the "usual pattern". Differences in subject matter and value profiles stem from the personal agendas, intellectual interests, and individual career histories. Thus, while presidential addresses are accorded special status as organizational documents, they remain personal statements reflecting the intersection between individual biography and organizational history.

However, even if ACR presidential addresses represent personal views, our analyses suggest commonality, as well as uniqueness. This commonality reflects the function of presidential addresses as ritual events in the lives of scientific organizations: they are solidarity-producing social situations (especially those delivered over lunch with the communion of food). Even when the content of the addresses discusses potentially divisive issues, the ritual context of the address provides conventional boundaries within which the dimensional polarities are addressed.

Further, where presidents use the address as a forum to push their pet ideas, they do not set up their viewpoint in contradistinction to some other one. The field of consumer research is increasingly polarized into two intellectual camps, although they do not correspond to the value-based and thematic clusters found in this analysis. The content of presidential addresses does not reflect this intellectual dissensus, but portrays the field as more integrated than it actually is. No ACR president has suggested that the field embraces two opposing paradigms, although this division has been discussed in the literature (Anderson, 1986; Deshpande, 1983) and is widely recognized by centrally connected ACR members as fundamentally shaping the content of the ACR annual conference program. The neglect of this important issue in presidential addresses reflects their solidarity producing function.

The themes and value positions identified in this analysis reflect the organizational culture into which new

ACR members are socialized, as well as existing agendas of experienced members. The analysis suggests that the organization is dedicated to improving research quality and developing a theoretical base that will move consumer behavior toward the recognition as an independent discipline. Those speeches not addressing research quality reflect a concern with serving the membership more effectively.

Both the field of consumer research and ACR are young but growing rapidly, and both have attracted talented researchers from a variety of disciplines. Unlike the organizations studied by Namenwirth, ACR combines interests of both academic and practitioner members, including those not directly involved with research. To the extent that central concerns and issues of the field are incorporated in presidential addresses, they merit continuing study by those who wish to understand and participate in the growth of both the organization and the consumer research discipline. Bettman (1987) in a recent editorial in the *ACR Newsletter* recommended research using a sociology of knowledge perspective to analyze the field of consumer research. This paper suggests some intellectual or ideational clusters characterizing the field. A logical extension of these findings would employ a sociology of knowledge perspective addressing the question of the social structural foundation of these intellectual clusters.

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Appendix
Chronology of Speeches and Themes

Author and Date	Cluster	Value	Profile	Key Theme and Issues	
Cohen 1972	Organizational Dynamics	Neu	*** ****	Val	Central role of ACR for discipline
		App	**** ***	The	Importance of consumer welfare
		Cos	**** *	Par	
		Met	* *	The	Interdisciplinary view
Pratt 1973	Organizational Dynamics	Neu	*** ****	Val	Human growth metaphor
		App	* *	The	Historical account of ACR development
		Cos	* *****	Par	Purposes of ACR
		Met	* *****	The	Interdisciplinary mission of ACR
Jacoby 1975	Development of Knowledge	Neu	***** *****	Val	Human growth metaphor
		App	* **	The	Broad definition of consumer behavior independent of disciplinary boundaries
		Cos	* ****	Par	Critique of consumer behavior theory, methods, and research agenda
		Met	***** ***	The	Commitment to prevailing research paradigm
Gardner 1976	Organizational Dynamics	Neu	*** ***	Val	Development of the discipline
		App	* *****	The	
		Cos	*** ***	Par	Interdisciplinary nature of field
		Met	* *	The	Role of ACR in defining the field
Kassarjian 1977	Development of Knowledge	Neu	*** ****	Val	Human growth metaphor
		App	**** *	The	Misplaced projection of importance to consumers of brand choice by consumer research
		Cos	** **	Par	
		Met	** **	The	Need for parsimonious theory in field
Kernan 1978	Application of Knowledge	Neu	***** *****	Val	Human growth metaphor
		App	***** **	The	Knowledge for practical application
		Cos	** **	Par	Investigate "everyday" events
		Met	* *	The	

Hunt 1979	Application of Knowledge	Neu ***** App ***** Cos * ** Met **	***** ***** * ** ** **	Val _____ The _____ Par _____ The	Ethical and scholarly issues of expert witnesses
Wilkie 1980	Develop- ment of Knowledge	Neu * App * Cos ** Met *	***** ***** * ** ** *	Val _____ The _____ Par _____ The	Interdisciplinary and moral foundation of scholarship Commitment to prevailing research paradigm
Olson 1981	Progress through Theory	Neu * App ** Cos * Met *	***** ***** * ***** ***** *****	Val _____ The _____ Pa _____ The	Need for innovative theo- retical approaches Need for developing, not borrowing concepts Consumer behavior as distinct discipline
Zaltman 1982	Progress through Theory	Neu * App * Cos ** Met **	**** ***** ***** * * *****	Val _____ The _____ Par _____ The	Need for innovative theo- retical approaches Consumer behavior as distinct discipline
Bern- hardt 1983	Organiza- tional Dynamics	Neu * App * Cos ** Met *	**** **** ***** ***** ***** *****	Val _____ The _____ Par _____ The	History, purposes, and central role of ACR
Sheth 1984	Organiza- tional Dynamics	Neu * App ** Cos * Met *	** ** ***** ***** ***** * *	Val _____ The _____ Par _____ The	Central role of ACR Encouragement of Interdis- ciplinary contact Need for normative theory and research Human growth metaphor
Wright 1985	Progress through Theory	Neu * App * Cos ** Met *	* ***** ***** * ***** *****	Val _____ The _____ Par _____ The	Innovative theoretical approaches Consumer behavior as distinct discipline Consumer perspective

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Belk	Develop-	Neu	*****	*****_Val	Innovative theoretical approaches
1986	ment of		*****		
	Knowledge	App	* *****	*_The	Consumer Perspective
		Cos		_Par	
		Met	* *	*_The	Importance of studying impact of consumption on human well being

Dimension	Key to Abbreviations		
VALUE ORIENTATION	Neu Value Neutral	Val Value Laden	
SCIENTIFIC ORIENTATION	App Applied	The Theoretical	
ORGANIZATIONAL SCOPE	Cos Cosmopolitan	Par Parochial	
SCIENTIFIC PROGRESS	Met Methodological	The Theoretical	

For each document every * represents 5% of paragraphs.

The Formation of Consumer Choice Sets: A Longitudinal Investigation at the Product Class Level¹

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Abstract

In this paper, choice set formation was viewed as a categorization phenomenon in which the consumer simplifies the decision making process by assembling relevant brand/product alternatives into a category. The stability of category membership in a gift-giving context was then traced in a longitudinal study. It was found that items included in the category on two occasions tended to be elicited earlier and rated higher in exemplar-goodness and liking relative to items included only once. In addition, items deleted from the choice set were rated lower in exemplar-goodness and liking than those added to the set on the second occasion. Implications for studying the dynamics of consumers' choice set formation are discussed.

Introduction

Understanding how consumers form sets of choice alternatives is critically important for understanding consumer choice behavior. While researchers have spent considerable time assessing the impact of the size and nature of the choice set on choice processes and outcomes (Wright 1975; Hayes-Roth 1982; Huber, Payne, and Puto 1982; Park and Lutz 1982), they have only recently begun to address the question of how choice sets are formed.

Previous research has focused primarily on choice sets of competing brands within a specified product class and has examined these choice sets at only a single point in time (May 1979; Parkinson and Reilly 1979; Brisoux and Laroche 1980). The typical approach in these studies has been to ask consumers, at a particular point in time, to identify the brands they consider as acceptable purchase alternatives within a given product class. While this approach has been useful in developing our understanding of choice sets, it may only be relevant for situations in which the consumer has had enough experience with the choice situation in question and hence already has knowledge about the set of alternative brands that are acceptable. In such situations, the alternatives making up the consumer's choice set are likely to be relatively stable over time.

Consumers do face situations, however, in which they must make choices among alternatives from different product categories (Johnson 1984; 1986; Bettman and Sujan 1987). For example, a consumer often faces choices about what to do on a free weekend, about how to spend their income tax refund, or about what gift to buy for a friend's birthday. Since these "product class" choice situations tend to occur less frequently and are often more situation specific, the relevant alternatives are less obvious. As a result, the consumer's choice set may be less stable over time, that is, alternatives may be deleted from and added to the choice set as it is formed. To capture the process by which choice sets form under these conditions requires a longitudinal research design. Accordingly, a study was

designed to examine the contents of consumer choice sets over time. In particular, the study investigated the stability of the alternatives considered in a product class choice situation by analyzing the contents of consumer choice sets at two points in time.

In the remainder of this paper we first propose a conceptual framework for viewing the formation of consumer choice sets. Next we derive study objectives from this proposed framework and we describe the results of an exploratory study designed to address some research propositions.

Conceptual Framework

The formation of a choice set can be viewed as an act of categorization on the part of the consumer (Narayana and Markin 1975; Gutman 1982; Troye 1983). The purpose of this categorization act is to assemble the set of relevant brand/product alternatives for the purchase situation at hand and thereby facilitate the decision making process. This view recognizes that consumers form choice sets at a variety of levels, ranging from choice sets comprised of alternatives representing different product classes (e.g., buying a new stereo system versus taking a vacation), to different product forms (taking a ski vacation versus a Caribbean vacation) to different brands (going to Vail, Colorado versus going to Stowe, Vermont). Regardless of the level at which the choice set forms, however, its function is to help the consumer achieve the goal of making a purchase decision (cf. Barsalou 1983; 1985).

The present conceptualization views consumer goals as central to the process by which consumer choice sets form. When the consumer's goal is a familiar one, as it is in many brand choice situations, the choice category is likely to be fairly well-established in memory and thus can be retrieved as a set. In these situations the consumer's choice set is likely to be relatively stable, though not totally invariant², over time. In contrast, when the consumer's goal is a novel one, the consumer's choice category has yet to be established in memory and hence will have to be constructed for the first time. In these situations the consumer's choice set is likely to be relatively unstable over time--that is, the composition of the choice category is likely to change as the consumer learns more about the alternatives that might be relevant to the particular situation at hand. As the consumer gains experience with a particular choice situation, this category will tend to become more firmly established in memory, and hence more likely to be retrieved as opposed to constructed (cf. Barsalou 1983; Bettman and Zins 1977).

Viewing the formation process in this manner allows us to draw upon recent work in categorization theory and related consumer research for insights into the

¹ The authors thank Jerry Olson, Mita Sujan, and Jack Swasy for their helpful comments on an earlier draft.

² It is important to note that even in highly familiar, recurring choice situations the contents of the choice category will likely vary from one purchase occasion to another due to the influence of situational and/or individual factors.

stability of consumer choice sets. This work has shown that the members of a category are not identical but vary in terms of their degree of category membership or "typicality." Thus, the members of a category (e.g., birds) vary in terms of their typicality ranging from those that are very typical (e.g., robin) to those that are very atypical (e.g., ostrich).

Researchers in both the categorization and consumer behavior areas have shown that the more typical members of a category tend to be listed earlier and more frequently in elicitation tasks than less typical members (Mervis, Catlin and Rosch 1976; Nedungadi and Hutchinson 1985). Stated differently, items that are frequently associated with the category over time tend to be the more typical members of the category. These results suggest that alternatives that are consistently included in the consumer's choice set should be elicited early and be rated high in typicality.

Early work in categorization theory viewed categories as inherently neutral entities. This view has recently been challenged in a variety of domains including consumer behavior. As Cohen (1982, p.98) argues, consumers "don't simply organize the environment out of idle curiosity...they group objects in categories to meet a common purpose or end. To achieve such a purpose, however, categories should not be neutral but inherently evaluative." Thus if consumer choice sets are to be functional (i.e., facilitate the decision making process), they will be comprised of alternatives with generally positive evaluations³. Further, the alternatives that are consistently included in the consumer's choice set over time should have more positive evaluations.

Study Objectives and Methodology

The proposed conceptual framework has a number of implications for the study of choice sets. The framework would suggest that in a longitudinal study of consumer choice sets one might expect a subset of items to remain under consideration over time. That is, while alternatives may be dropped from and added to the choice set as it develops, certain alternatives are likely to be consistently included in the choice set over time, i.e., exhibit a pattern of stability. This stability is perceived to be a function of the degree of typicality and liking of the item. Conversely, one would expect other items to be unstable due to low degrees of typicality and lower positive evaluations. In combination, these expectations suggest the following research proposition:

Relative to the other members, stable members of a consumer choice set are listed earlier in elicitations, are rated higher in typicality, and are rated higher in liking.

To explore this research proposition a two-phase study within a gift-giving context was designed. The context was selected so as to be a familiar setting for the subject population—undergraduate students. At each

phase of the study, subjects completed a questionnaire consisting of two parts. In the first part, subjects read a choice scenario and generated a list of choice alternatives. The choice scenario described a person who needed to buy a birthday gift for their father—someone who seems to have "everything." Subjects were asked to place themselves in that situation and were instructed to list: "the types of gifts that *you* would consider buying for the man who has everything." In the second part, subjects rated each of the self-generated alternatives on a series of four rating scales: two scales to measure liking and two scales to measure typicality. The liking variable was measured using two 7-point semantic differential scales (good/bad; like/dislike). For these ratings subjects were instructed to evaluate how *they* felt about the item as a gift to get for the man who has everything. Coefficient alpha was 0.96 for time period 1 (i.e., phase 1) and 0.94 for time period 2 (phase 2). Typicality was also measured with two 7-point semantic differential scales (excellent example/poor example; extremely typical/not typical at all). The first scale is frequently used to operationalize degree of category membership, it measured how "good an example" the item was of its category (Rosch 1973). The second scale was expected to be related to the first, it measured how typical the item was of its category. The coefficient alphas for the two scales were disappointing, -0.21 and 0.15 respectively for time periods 1 and 2. At least in the context of the present study, it appeared that how good an example the item was of the category was not related to how typical the item was. Based on this finding, the decision was made to treat the two scales as separate in the analyses of the results. The two scales were termed "exemplar-goodness" and "typicality" respectively. Thus, three dependent measures were employed in the analyses: liking, exemplar-goodness and typicality.

In the first phase of the study, 83 subjects completed the study questionnaire. In the second phase, subjects completed the same questionnaire following a one-week time delay. The 61 subjects who completed both phases of the study produced the data analyzed here.

Results

Number of Items Generated

As might be expected, subjects generated a wide variety of gift alternatives. (A rough classification of the items generated in each time period is provided in the Appendix). For each subject the items generated were coded as either matches or non-matches according to whether they appeared in the choice set in both time periods or in only one. The results of this procedure are presented in Table 1. In any given time period subjects' choice sets were made up of an average of 7-8 items, with a range of 2 to 10 items. Just over half (57%) of the items listed at T1 were listed again at T2; a similar percentage (54%) was found for the items listed at T2. Of the items that were listed in both time periods the majority were exact verbatim matches (e.g., the subject listed "a shirt" in both time periods); roughly 10% were specific to general matches (i.e., the subject listed "a shirt" in T1 and "clothing" in T2); and a fraction were general to specific matches (i.e., the subject listed "clothing" in T1 and "a shirt" in T2). A by-subject analysis of choice set stability reveals that only two subjects (3%) had no matching items, while five subjects (8%) recorded an exact matching of their first list. These results suggest that both stable and non-stable items were present in subjects' choice sets.

³ We recognize that the consumer's choice set may also be comprised of alternatives with negative evaluations, as in the case of a homeowner who must choose among a number of alternative insurance policies each of which he evaluates negatively. However, even in such cases the consumer is likely to consider only those alternatives which he views as minimally negative.

Table 1
Mean Number of Items Listed By Time Period

Item Category	Time 1	Time 2
Total # of Items listed	7.6	7.9
Non-matches (listed only once)	3.3	3.6
Matches (listed twice)	4.3	4.3
Exact matches	3.7	3.7
Specific-general matches	0.4	0.3
General-specific matches	0.2	0.2

Note: N = 61.

Characteristics of Stable and Non-stable Items

The research proposition stated that the stable members of subjects' choice sets would be elicited earlier, rated higher in typicality, and rated higher in liking than non-stable members. To explore this proposition the order in which the items were listed was analyzed first. As evidenced in Table 2, the stable members of the choice set (those that were listed twice) tended to be elicited earlier than members that were not stable (those that were listed only once). This pattern held true for both time periods.

To further examine the differences between the stable and non-stable members of consumers' choice sets, mean scores on the liking, exemplar-goodness, and typicality scales for the stable items were compared with those for the non-stable items (see Table 3). For each comparison, two scores were computed for each subject: the mean rating for the subset of items listed once and the mean rating for the subset of items listed twice. The statistical significance of the difference between these two scores was computed using a simple t-test.

For the items listed in the first time period, the mean liking and exemplar-goodness scores for the items listed twice were higher than the scores for the items listed once (for liking: $t(53) = 7.10, p < .0001$; and for exemplar-goodness: $t(53) = 5.99, p < .0001$).

Table 2
Percent of Subjects Listing Each Item Once Versus Twice

Time Period 1:			Time Period 2:		
Item #	% Listing Twice	Total	Item #	% Listing Twice	Total
1[a]	69%	61	1	77%	61
2	62	61	2	64	61
3	68	59	3	62	61
4	63	59	4	57	60
5	56	54	5	55	55
6	44	45	6	33	49
7	43	37	7	37	40
8	45	31	8	44	36
9	29	28	9	47	32
10	64	25	10	35	26

[a] To be read: The first item listed by subjects was listed twice by 69% of the 61 subjects listing that item in that time period.

Table 3
Mean Scores for Items Listed Once Versus Twice

	Time Period 1:		Time Period 2:	
	Once	Twice	Once	Twice
Liking	4.5	5.31[a]	4.89	5.26[a]
Exemplar-good	4.26	5.14[a]	4.62	5.03[a]
Typicality	4.29	4.45	4.3	4.53[b]

[a] Difference significant at $p < .01$

[b] Difference significant at $p < .10$

Similar results were also found for the items listed in the second time period (for liking: $t(55) = 3.26, p < .005$; and for exemplar-goodness: $t(55) = 2.90, p < .005$). These results provide strong evidence for our research proposition. The typicality results, however, although in the hypothesized direction, did not differ significantly for either time period (T1: $t(53) = 0.80, N.S.$; T2: $t(55) = 1.34, p < .10$).

Liking, Exemplar-goodness and Typicality Characteristics

To examine the liking, exemplar-goodness, and typicality characteristics of the items generated, two additional analyses were performed. Mean scores on the study variables for the stable and non-stable items across the time periods were tested for differences. As shown in Table 4, the mean exemplar-goodness score for the matching items at T1 was slightly higher than at T2 ($t(57) = 1.64, p < .05$). A similar result was observed for the liking measure, although it only approached significance ($t(58) = 1.30, p < .10$). For the typicality measure, the mean score was slightly higher at T2, although not significantly higher ($t(57) = -1.13, N.S.$).

For the set of non-matching items, the items that were dropped from the choice set (those listed in T1 only) were lower in both liking and exemplar-goodness relative to the items that were added to it (those listed in T2 only) (for liking: $t(53) = -3.13, p < .005$; and for exemplar-goodness: $t(52) = -2.03, p < .025$). In contrast, for the typicality measure, the deleted items tended to be viewed as slightly more typical relative to the items that were added, although, once again, this difference was not statistically significant ($t(52) = 0.97, N.S.$). Thus, compared to the items considered in T1 but

Table 4
Mean Scores for Matching and Non-Matching Items Listed in Time 1 Versus Time 2

	For Matching Items:		For Non-Matching Items:	
	T1	T2	T1	T2
Liking	5.4	5.28[c]	4.49	4.83[a]
Exemplar-Goodness	5.22	5.05[b]	4.26	4.57[b]
Typicality	4.43	4.55	4.35	4.16

[a] Difference significant at $p < .01$

[b] Difference significant at $p < .05$

[c] Difference significant at $p < .10$

subsequently dropped, the items that were added to the choice set in T2 were generally higher in liking and exemplar-goodness and lower in typicality. It appears that subjects replaced the items they deleted with additional items that they considered to be better choice alternatives.

Discussion

The purpose of this investigation was to examine the dynamics of consumer choice set formation from a categorization perspective. The results of the study are encouraging. Items which remain in the choice set over time are liked more, seen as better examples of the category, and are slightly more typical than items which do not remain in the choice set. The stable items also tended to appear earlier in lists resulting from the elicitation procedures. Thus, some initial support for adopting a categorization perspective has been provided. At the same time, however, the study raises a number of issues which ought to be explored in future research.

One somewhat disturbing finding was that the two scales used to measure typicality were not related. The low coefficient alpha suggested that the two ratings, exemplar-goodness and typicality, should be treated as two separate measures—one that captures how good an example an item is of its category and a second that captures how typical the item is of its category. One possibility is that subjects did not fully understand the rationale behind the exemplar-goodness measure and might have interpreted it as an attitude measure rather than as a measure of degree of category membership. A more intriguing possibility is that the observed independence of the two measures was only an artifact of the particular context involved in the study, that of "choosing a gift for a man who has everything." By construction, a good example of a gift for the man who has everything should not be something that is typical but, rather, something that is highly atypical, i.e., something novel and unique. In a different context, the two dimensions might actually have been highly related to each other. For example, when "deciding what to do with one's income tax refund," the two options of "taking a vacation" and "buying a stereo system" might both be seen as good examples that are also highly typical. This explanation suggests that, at least for certain categories, the typicality of an item does not necessarily correspond with how good an example the item is.

A more positive and intriguing finding is the strong relationship observed between liking and exemplar-goodness (the correlation between the two measures was 0.83 in T1 and 0.88 in T2). One plausible interpretation of this relationship is that the two measures both tap the same underlying dimension: how appropriate the alternative is for achieving the particular goal/objective in question. The choice alternatives that are liked and that are seen as good examples of their category are appropriate because they are likely to satisfy one's goal of making a suitable purchase decision. The results of the present study are consistent with this interpretation. The items that were included as members of subjects' choice sets were all seen as appropriate choice alternatives and hence all received generally positive evaluations. In addition, the stable items in subjects' choice sets, were rated high in liking and exemplar-goodness relative to the items that were not stable, suggesting that they may have been the more appropriate choice alternatives.

Summary and Conclusions

In this paper we have explored the dynamics of consumer choice set formation from a categorization perspective. Choice set formation was viewed as a categorization phenomenon in which the consumer simplifies his or her decision making process by assembling relevant brand/product alternatives into a category. The stability of category membership in a gift-giving context was then traced in a longitudinal study. It was found that the items that were included in the category on two occasions tended to be elicited earlier, rated higher in exemplar-goodness, and rated higher in liking than items that were included only once. In addition, it was found that items that were deleted from the choice set were rated lower in exemplar-goodness and liking than those that were added to the set on the second occasion.

These findings in combination with earlier reported findings in the literature suggest a number of issues for future research. Chief among these is the role of evaluative factors in the formation of consumer choice sets. Evidence from the present study suggests that these evaluative factors are the driving forces behind the formation of consumer choice sets. The origin of these factors and their relationship to other theoretical constructs are important topics for future research.

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Appendix

Rough Classification of Items Listed in Time Period 1

ITEM	# IN T1
1 Clothing Accessories (Tie/Belt/Scarf/Hat)	38
2 Gift Certificate to a Store	27
3 Tickets to an Event (Show, Concert, Sport)	24
4 Sports Equipment/Accessories	21
5 A Book	20
6 Cologne/After Shave	19
7 Liquor/Wine/Beer	18
8 Magazine Subscription	18
9 Jewelry	16
10 Dinner Out	14
11 Music Related Items (Records, Tapes, CD's)	14
12 Photo/Portrait/Picture	14
13 Sweater	14
14 Tools	13
15 Vacation/Trip/Weekend Away	13
16 Athletic Clothing	11
17 Writing-Related Items (Pens, Stationary)	11
18 Candy/Nuts/Miscellaneous Food	9
19 Clothes	9
20 Coat/Sportscoat/Suit	9
21 Flowers/Balloons	9
22 Shoes	9
23 Smoking Related Items	9
24 Car-Related Accessories	8
25 Shirts	8
26 Miscellaneous Electronic Items	7
27 Briefcase	6
28 Hobby-Related Items	6
29 TV/VCR	6
30 A Pet	5
31 Something Handmade	5
32 Novel/Joke Gifts	4
33 A Membership to Athletic Club	3
34 A Telephone	3
35 Desk Accessories	3
36 VCR Tapes	3
37 A Card	2
38 Lawn/Snow Equipment	2
39 Pajamas/Robe	2
40 Stocks/Bonds/Investments	2
41 Wallet	2
42 Your Time/Love	2
43 Anything You Need (so you can borrow it)	1
44 Furniture	1
45 Glassware/Mug	1
46 Home Appliance	1
47 Lottery Tickets	1
48 Money	1
49 Mortgage Payment	1
50 Newspaper Ad about his Birthday	1
51 Personal Computer	1
52 Something New in Technology	1
53 Straight A's Report Card	1
54 Surprise Birthday Party	1

Rough Classification of Items Listed in Time Period 2

ITEM	# IN T2
1 Clothing Accessories (Tie/Belt/Scarf/Hat)	36
2 Tickets to an Event (Show, Concert, Sport)	30
3 Gift Certificate to a Store	27
4 Dinner Out	20
5 Liquor/Wine/Beer	20
6 Music Related Items (Records, Tapes, CD's)	18
7 Cologne/After Shave	17
8 Jewelry	17
9 Vacation/Trip/Weekend Away	17
10 Sports Equipment/Accessories	15
11 Sweater	15
12 Photo/Portrait/Picture	14
13 Magazine Subscription	13
14 A Book	12
15 Car-Related Accessories	11
16 Athletic Clothing	10
17 Candy/Nuts/Miscellaneous Food	10
18 Miscellaneous Electronic Items	9
19 Shirts	9
20 Tools	9
21 Writing-Related Items (Pens, Stationary)	9
22 Hobby-Related Items	8
23 Shoes	8
24 Smoking Related Items	8
25 TV/VCR	8
26 A Pet	7
27 Flowers/Balloons	7
28 Clothes	6
29 Desk Accessories	6
30 Briefcase	5
31 Pajamas/Robe	5
32 Something Handmade	5
33 Coat/Sportscoat/Suit	4
34 VCR Tapes	4
35 Wallet	4
36 A Camera	3
37 Games/Puzzles	3
38 Glassware/Mug	3
39 Money	3
40 Novel/Joke Gifts	3
41 Personal Computer	3
42 Your Time/Love	3
43 A Membership to Athletic Club	2
44 Furniture	2
45 Home Appliance	2
46 Lint Brush	2
47 P.C. Software/Accessories	2
48 Stocks/Bonds/Investments	2
49 Toiletries	2
50 A Card	1
51 A Jacuzzi	1
52 A Star (Buy a star in space & name it)	1
53 A Telephone	1
54 Antiques	1
55 Lawn/Snow Equipment	1
56 Lottery Tickets	1
57 Mortgage Payment	1
58 Singing Telegram	1
59 Surprise Birthday Party	1

Shopping for Variety in Red Meat, Poultry, and Fish

Christine J. Hager

Abstract

Two definitions are used in this paper to measure "variety" in meat purchases. The first is the number of types of meat, poultry, or fish items purchased and used by a household. The second measure is the amount of dispersion in the quantity of various meat types purchased and used. These measures become the dependent variables in regression analyses of the effects of household composition and income on the consumption of variety. Results indicate that age-sex composition and income of households affect these measures of the amount of variety in the weekly meat, poultry, and fish bundle.

Introduction

The importance of variety as a characteristic households seek when they shop for food products has received scant attention (McAlister 1979; McAlister and Pessemeir 1982; Shonkweiler, Lee, and Taylor 1985; Theil and Finke 1983). Demand and consumption equations for meat have usually estimated responses to price and income changes (Chavas 1982; Purcell and Raunekar 1971), but have not considered variety. Most studies of food characteristics have focused on nutrients to the exclusion of nonnutrient characteristics, including taste, processing, and variety (Adrian and Daniel 1976; Eastwood, Brooker, and Terry 1985; Ladd and Suvannunt 1976; Wohlgenant 1985). However, certain foods may be purchased because shoppers believe a varied diet is a healthy diet or because their families derive benefits from variety in addition to the nutritional benefits of the foods. Few attempts have been made to consider variety as a characteristic of the food bundle and to analyze household factors that affect the amount of variety purchased in the food bundle.

The present study attempts to operationalize the concept of "variety" and to analyze the consumption of variety in the meats used by households. Two measures of variety are defined and used as dependent variables in regression analyses -- a measure of the number of meat types in the food bundle and a measure of the dispersion in the amount of each type of items included in the bundle. This study analyzes effects of household income and composition on these two measures of "variety" as contained in a bundle of red meat, poultry, and fish items purchased and used by a household in a week.

Data

The data are from the Spring 1977 household phase of the 1977-78 Nationwide Food Consumption Survey. The survey collected information about foods used by households during a 7 day period in Spring 1977. A 15 digit code was assigned to each item. The code provides information about the type of food item, the specific cut of the item, and further detail about the item such as whether it contained a bone and the type of processing (fresh, frozen, smoked, canned, etc.).

The data contain specific information about each item the household used during the week. For this study red meat, poultry, and fish items are grouped by type of meat as follows:

BACON = bacon, sausage, luncheon meats, franks
PORK = all pork items not included in BACON
POULTRY = all poultry items not included in BACON or mixed with other meats
BLOIN = beef from the loin or rib portions
RLIVER = liver and other organ meats from red meats
FISH = all fish except shellfish
SHELLFISH = shellfish
MISC = ground beef, chuck, stew beef, meat mixtures, and all other cuts not included above

The individual red meat, poultry, and fish items purchased and used by a household during a week are aggregated into a bundle of such items. When households purchase a bundle of individual items, they are also purchasing the characteristics of this bundle, including variety, nutrients, and nonnutritional services (deboning, processing, butchering into smaller cuts, etc.).

A total of 1,850 households having complete income and demographic information on their record reported purchasing and using 17,660 items during the survey week.

Two definitions of variety are used for the study. Variety is first defined as the number of different groups of red meat, poultry, and fish items chosen by the households during the survey week. Households may use items from as many as eight groups, but the average number of groups from which items were selected was 3.81, ranging from 1 to 7 groups (standard deviation = 1.29). Because variety is an elusive characteristic of meat purchases, a second measure of variety is used to reflect the variation in the quantity of meat eaten from each group. This second measure is the standard deviation in the number of pounds of each of the categories of items used by a household (DISPERSION).

The households in this study used an average of 6.66 different items for an average quantity of 12 pounds of meat products in the week, mainly from the bacon, poultry, pork, and miscellaneous categories (table 1). Households used amounts of each type of item within two pounds of the mean for the group.

Table 1 indicates the average pounds of each type of item, the standard deviation in the pounds across households, and the standard deviation (dispersion) in the pounds across the eight items. The average dispersion in the pounds of each type of item used is 2.06, with one standard deviation equalling about 1.56 pounds.

Model

The approach used is a simple regression analysis of a single equation consumption model that indicates the effects of household characteristics and income on the amount of variety in the bundle, as measured by number of pounds purchased and used of each type of item:

$$Y = f(A, I)$$

where

Y = dependent variable (number of types of items or dispersion among the pounds of items)

A = set of household characteristics

I = set of income variables

Table 1
Means and Standard Deviations for Pounds
of Items of Different Types

Item	Mean	Standard Deviation
Pounds of BACON	2.06	2.18
Pounds of BLOIN	0.83	1.78
Pounds of PORK	1.66	2.71
Pounds of RLIVER	0.13	0.65
Pounds of POULT	2.41	2.94
Pounds of FISH	0.62	1.34
Pounds of SHELL	0.13	0.96
Pounds of MISC	4.18	4.17
Total Pounds	12	9.42
DISPERSION	2.06	1.56

Table 2
Definitions of Household Size Variables

Variable Name	Definition
KIDS6	All members over 12 months and less than 6 years of age
MALES8	Males 6 years or older and younger than 9 years
MALES11	Males 9 years or older and younger than 11 years
MALES14	Males 11 years or older and younger than 14 years
MALESM	Males 14 years or older and younger than 34 years
MALESMA	Males 34 years or older and younger than 64 years
MALES65	Males 65 years or older
FMALES8	Females 6 years or older and younger than 9 years
FMALES11	Females 9 years or older and younger than 11 years
FMALESYW	Females 11 years or older and younger than 23 years
FMALESCB	Females 23 years or older and younger than 50 years
FMALES64	Females 50 years or older and younger than 64 years
FMALES65	Females 65 years or older

NOTE: These variables refer to the number of persons in the household in these categories

Household size is defined in terms of the number of members of given ages and sexes (table 2). Specifying household composition in terms of numbers of individuals in given age and sex groups is more consistent with the reporting of nutrient levels and other consumption information than is the life cycle approach. The parameters from the regression can then be interpreted as the effect on the quantity of the characteristic contained in the bundle, *ceteris paribus*, of adding one more individual in the specific age and sex group (Hager 1985).

Another variable represents an adjustment for the number of meals eaten away from home by members of the household that are not offset by additional meals

eaten by guests (MADJ). If each household member consumes three meals per day at home, the total number of meals served to that member out of household supplies would be 21. The meal adjustment is defined as the difference between the total number of meals actually served out of household supplies minus 21 times the size of the household. No adjustment is made for the number of meals served. Household members may desire less variety at home if they are eating more meals away from home or they may want more variety at home if they are eating more meals away from home and these meals consist of fast food hamburgers or chicken.

Other socioeconomic variables are included because they are expected to serve as proxy variables for tastes and the value of time of the food shopper. Employed shoppers (FSEMP = 1) may have higher opportunity costs of time for food preparation, indicating less time to plan variety into their meals. Education (ED1 = 1 if the food shopper has at least a high school diploma) may also reflect opportunity costs of time. Ethnic differences between whites and nonwhites (RACE = 1 if the respondent is nonwhite) may indicate different preferences for a variety of meats.

Income indicates the ability to purchase variety, but a variety of meats could be purchased because different cuts are on sale. Income is measured as monthly after tax income divided by 1,000 (YAT1), this measure squared (YAT1SQ), and the bonus value of food stamps. The quadratic measure is included because it is likely that households do not respond to increases in income in a linear manner. That is, at some income level, they will no longer be willing to spend an additional dollar for more variety.

Results

Table 3 indicates the results for the single equation models for each of the two measures of variety. Household size and composition variables influence the amount of each measure of variety, as expected; but as the number of persons in each age-sex group increases, the amount of variety in the bundle also increases. These effects differ by age and sex group.

Additional males ages 34 to 64 increase the number of groups of items selected by .38 and additional females in this age group increase the number of groups by about the same amount. However, a household with more males ages 34 to 64 has more dispersion in the number of pounds of items in each category, indicating that more meat items may be purchased from fewer categories rather than evenly divided among categories.

The meal adjustment variable has a small, significant, and positive effect on the variety in the bundle. Additional guest meals lead to an increase in the number of types of items served and to a slightly wider difference in the number of pounds of items purchased in each category. An alternative explanation is that as more meals are eaten away from home, less variety is sought in meals at home.

The variable for race has a significant, positive effect on variety suggesting that nonwhite households purchase a greater number of items from different groups than whites. This result may be due to an increased use of red meat, poultry, and fish items. Nonwhite food shoppers may be more responsive to sales or have a greater preference for a variety of meats used in a week.

Households with an employed food shopper may have less dispersion in their food supplies because their members frequently eat away from home or eat more

Table 3
Regression Parameters for
Measures of Variety

Variable	Number of Items		Dispersion	
	b	s.e.	b	s.e.
INTERCEP	2.9	.11*	0.55	.11*
KIDS6	0.26	.06*	0.23	.11*
MALES8	0.09	0.1	0.42	.10*
MALES11	0.26	.11*	0.73	.12*
MALES14	0.21	.09*	0.51	.09*
MALESM	0.3	.05*	0.66	.65*
MALESMA	0.38	.07*	0.77	.07*
MALES65	0.13	0.1	0.63	.11*
FMALES8	0.04	0.11	0.72	.12*
FMALES11	0.19	0.1	0.05	0.11
FMALESYW	0.28	.05*	0.5	.05*
FMALESCB	0.4	.08*	0.69	.08*
FMALES64	0.42	.08*	0.58	.09*
FMALES65	0.25	.09*	0.37	.10*
MADJ	0.02	.00*	0.02	.00*
YAT1	0.03	.01*	0.01	0.01
YAT1SQ	0	0	0	0
BONUS	0	0	0	0
ED1	0.03	0.07	-0.07	0.07
FSEMP	-0.15	0.06	-0.13	0.07
Degrees of Freedom	1829		1829	
Adjusted R-square	0.17		0.34	

NOTE: An asterisk (*) indicates $p < .05$ or less

roasts and leftovers from meats prepared in large quantities. Education of the food shopper does not affect the number of types of items. Neither employment nor education of the food shopper affects the dispersion in the number of pounds purchased in the selected groups. Income and the food stamp bonus have small, significant, and positive effects on the number of types of items used, but do not significantly affect the dispersion in the number of pounds of items. Therefore, it seems that as incomes increase, diversity in types of items increase even though households may not significantly change the relative quantities they consume among types of meat items.

Conclusions

These results are not conclusive. Variety is an elusive notion. One family may consider their diets to be varied if they have beef prepared five different ways during a week, or have beef every day one week and chicken every day the next week. Other families may use products from each group each week -- chicken on Monday, ground beef on Tuesday, etc.. Another family might have luncheon meats readily available, but use a wide variety of other meats for dinner meals. Still other families do not consider their diets varied unless they include eggs, cheese, beans, and various vegetables but eat mainly chicken, pork, or beef as meats. The measures of variety used in this paper are arbitrary definitions and rely on an arbitrary classification of foods into groups.

The model presented is a very simple one and does not include a measure of "price" as a model of demand would. It is not the price of any one type of item that would be of interest, but rather the relative expense of choosing items from more than one category. However, how to measure this "price" is not clear.

The amount of variation explained by the equations is small but significant. The model does add to the limited amount of information available about variety by illustrating responses of two measures of variety to the same socioeconomic variables. The results imply that the family characteristics and income only explain a small amount of the variation in the number of types of items and the dispersion in pounds of items of different types. Preferences for variety may not be easily captured by the specified socioeconomic variables. In addition, these results emphasize the difficulties in operationalizing the concept of "variety" in diets, defining the implicit value of variety in the food bundle, and estimating the influence of socioeconomic characteristics on the choice of frequently purchased items.

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The Influence of Variety on the Demand for Bundles of Musical Performances

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Abstract

The influence of variety on subscription ticket sales was studied using box office data provided by a major U.S. opera company covering a five-year period. Performance timing, opera popularity, and production attributes (such as subtitles and premieres) were found to be significantly related to attendance. Measures inspired by Pessemier's concept of structural variety (1985) were found to be insignificant predictors of sales. The results indicate the need for additional validation of variety measures and research on the effect of variety in product assortments on aggregate demand.

Introduction

In addition to investigating the behavior of consumers with regard to utilitarian products, consumer researchers have examined the choice and consumption of leisure goods. Examples of such products and services include television and radio programs, magazines, sports events, musical performances, and theatrical productions (Hawes 1978; Holbrook, Chestnut, Oliva, and Greenleaf 1984; Holbrook and Lehmann 1981; Tinsley and Kass 1978). The primary benefits of such products are subjective and involve such concepts as fun, enjoyment, and intellectual stimulation (Holbrook and Hirschman 1982).

Importance of Considering Bundles of Items

This research has tended to concentrate on the choice of individual items and the personal characteristics of consumers. However, in many cases consumers choose bundles of items, not single objects. For example, the current research examines consumer responses to subscription series of operatic performances. Many arts organizations offer similar subscription programs. Other situations might include book or record clubs, vacation packages, and clothing wardrobes.

Even in cases where consumers choose single products, the producer is often faced with the problem of designing a package of goods. These items interact with one another to create a bundle from which the consumer may select individual objects. The producer's task is to create a bundle such that the entire assortment is attractive to the consumer. Thus, a television programmer designs a schedule to provide an assortment of shows which he hopes will appeal to a loyal audience. Similarly, a magazine or newspaper editor includes a bundle of features and articles to interest the reader.

It is reasonable for consumers choosing such products to consider the degree of variety provided by the alternative product offerings. For example, in choosing several items of clothing, the purchaser may wish to maximize variety in order to provide suitable outfits for diverse occasions (e.g., the office, weekend trips, athletic activities, etc.). In choosing bundles of artistic products, the consumer may wish to avoid boredom by increasing the amount of variety within the bundle.

This paper presents an econometric analysis of audience response to an array of subscription series offered by a major U.S. opera company. The aggregate analysis leads to conclusions regarding the preferences of

audiences for this type of performance offering. Several operationalizations of the variety provided by alternative subscription packages are included in the analysis. In addition, some suggestions are offered concerning the extension of this investigation to the broader consideration of product bundles.

Literature Review

Econometric Analysis of Arts Attendance

A number of studies have been conducted to identify the determinants of aggregate demand for cultural events. The predictors fall into two classes: audience-related variables and product-related variables.

Skrzypczak (1970) used both types of variables to examine concert attendance for 23 major symphony orchestras. The cross-sectional regression indicated that metropolitan population, aggregate education measures, and musicians' salaries were the best predictors. However, due to the cross-sectional focus of the study no examination of repertory preferences was undertaken.

On the other hand, Weinberg and Shachmut (1978) included only managerial and performance-related variables in their ARTS PLAN model: timing, type of performance (e.g., chamber music, dance, jazz), single vs. multiple performance, and performer popularity. Although the performing organization used in the study offered subscriptions in addition to single tickets, only overall attendance was analyzed.

Cooper and Nakanishi (1978) used performance variables to explain ticket sales at a Los Angeles theater. Subscribers were found to prefer Saturday to weekday performances, matinees to evening performances, and higher-priced seats. Because subscribers purchased tickets for the entire season, individual performance attributes were not considered. The analysis of single-ticket sales was based on average sales for each play. Thus, timing variables were not included. Single-ticket buyers preferred comedies and musicals to dramas, classical to modern plays, and foreign plays. Variables representing cast attributes and newspaper reviews were also found to have a significant effect.

Holak, Havlena, & Kennedy (1986) incorporated both performance-related and audience-related variables in an analysis of attendance at Dallas Opera performances from 1975 to 1983. In addition, subscribers and single-ticket buyers were analyzed separately to ascertain differences in the relative effects of the independent variables on attendance for the two groups. Four variables proved to be significant predictors of overall (total) attendance: day of performance (weekends were more popular than weekdays), time of performance (matinees were more popular than evenings), type of opera (verismo operas were better attended than other types), and relative popularity. Subscribers were significantly more sensitive than nonsubscribers to the day and time of the performance, while nonsubscriber attendance was more heavily influenced by the popularity of individual operas. In addition, subscriber attendance was positively related to ticket price and symphony attendance. The relative unimportance of popularity for

subscriber attendance may be explained by the lack of choice alternatives available to subscribers.

Both Cooper and Nakanishi (1978) and Holak et al. (1986) yield little insight into the effect of repertory decisions on subscriber behavior. The planning of the subscription bundle is, however, a crucial decision for the arts organization, given the emphasis on building the subscriber base.

Variety-seeking and Product Assortments

In one of the few empirical investigations of product assortments, Green and Devita (1974) examined the problem of preferences for item collections in the context of a single meal. Using a conjoint approach, the preference was described in terms of attributes of the component objects.

McAlister and Pessemier (1982) provided a review of the variety-seeking literature as it pertains to consumer behavior. A number of studies model variety-seeking in terms of attribute inventories (Farquhar and Rao 1976, Jeuland 1978, McAlister 1982). McAlister (1982) developed a model of variety-seeking behavior in a dynamic framework based on the notion of attribute satiation. However, the emphasis in the model is on sequential choice behavior, rather than on the variety obtained by the selection of a single product. The idea of inventories is less appealing for nonphysical than for physical attributes, and the model does not directly incorporate variety (in the form of a desire for new or different stimuli). These studies tend to measure variety in terms of the number of different objects chosen, downplaying the degree of similarity between objects in the choice set.

Pessemier (1985) presented a conceptualization of variety which posited that variety can be decomposed into two separate constructs: structural variety and temporal variety. He provided several functional forms for the measurement of structural variety in a set of objects. These measurements are based on Euclidean distances between objects in a perceptual space. Calculation of the variety in a set thus requires identification of the orthogonal attribute dimensions which characterize the space. Pessemier's operationalization of variety acknowledges the existence of a continuum ranging from no variety to extremely high levels of variety. The amount of structural variety inherent in a set can be described in terms of attributes uncovered by the scaling procedure. Although Pessemier and McAlister (1982) presented some empirical results concerning varied choice behavior, extensive validation of the variety formulations remains to be done.

Unlike the individual-level focus of most research on variety, the current application involves aggregate data on sales, a surrogate measure for aggregate preference. Therefore, no individual data on attribute perceptions or object similarities are available to identify the relevant attributes as conceptualized by Pessemier (1985). The study instead seeks to compare the performance of a variety of possible attributes in explaining ticket sales. Several attribute-based variety measures are incorporated using the characteristics discussed by Pessemier (1985). The analysis then allows for the identification of the effects of these potential determinants of variety on preference at the aggregate level.

Data

The data used in the current study were provided by a major U.S. opera company and include information on all 191 subscription packages offered between 1979 and 1983. The box office reports include information on total unit attendance and dollar sales for each performance during the period as well as subscription dollar sales for each performance. The reports also include an indication of the percentage of capacity represented by the total attendance for each performance. The average level of attendance was 79%, with only 7% of the performances filled within 1% of capacity.

Total subscription sales for each season exhibited considerable variation, ranging from 81% to 133% of the average level over the five-year period. When sales are adjusted to reflect price changes, the total season sales still range from 85% to 113% of the five-season average. Thus, the sales include either new purchasers and/or multiple purchases and do not simply reflect switching behavior by a fixed set of subscribers.

Model Specification

Based on Holak et al. (1986), the model incorporates two general classes of variables: variables related to the timing and pricing of the subscription series and variables related to attributes of the opera performances themselves. In addition, a third group of variables hypothesized to be related to the level of variety contained in the subscription series was included. Each group of variables will be discussed separately.

Timing & Pricing Variables

Two dummy variables were used to represent three possible categories of performance times. WKENDMAT refers to matinee performances on Saturdays and Sundays, while WKENDEVE refers to evening performances on the same days. The reference category includes performances given on Tuesday through Friday evenings.

The average ticket price for each subscription performance was incorporated into the model as AVGPRICE. Since unit subscription attendance was not available, the price measure is based on the overall average ticket price [(total dollar sales)/(total unit attendance)].

Performance Variables

Five performance variables were included which are related to characteristics of the performances rather than the operas. The length of the subscription (typically 3 or 4 operas) was incorporated as LENGTH. Dummy variables were used to indicate the presence within a particular subscription offering of [1] a season opening night performance (OPENING), [2] a premiere of a new work or new production (PREMIERE), [3] a new production of an opera included in the series (NEWPRODN), and [4] an opera provided with simultaneous English translation projected above the stage (SUBTITLE).

Opera types: The differing appeal of operatic offerings was incorporated through the use of two groups of measures. The first group includes ten dummy variables which indicate the presence or absence of ten categories of operas in each subscription. The variables, based on categorizations developed by Martorella (1982) and Holak et al. (1986), are: BAROQUE, CLASSIC, BELCANTO, GERMANY19, FRANCE19, ITALY19, VERISMO, EARLY20, CONTEMP, and OPERETTA.

BAROQUE includes all operas composed prior to 1750, while CLASSIC contains works written during the latter half of the 18th and early years of the 19th century (e.g., Mozart operas). BELCANTO includes Italian operas of the early to mid-19th century by composers such as Rossini and Donizetti. GERMANY19 comprises 19th-century operas by German composers (e.g., Weber, Wagner), while FRANCE19 denotes operas from the Romantic period by French composers (e.g., Bizet, Gounod). ITALY19 encompasses such mid- to late-19th century composers as Verdi, with VERISMO incorporating operas characterized by more direct emotional expression (such as the operas of Puccini). EARLY20 includes operas from the first half of the 20th century which were not more appropriately included in the verismo category. CONTEMP operas include all works composed during the past 30 years and contain a fair number of local and world premieres. OPERETTA encompasses a wide variety of works, from the operettas of Strauss, Gilbert and Sullivan, and Lehar to more popular Broadway-type shows.

Serious/comedy: Within each category operas may be either comic or serious. This "comedy" attribute was included as a separate variable. COMEDY counts the number of comedies in the subscription.

Languages: In addition to the categorization by musical style, the language in which the operas were presented was included as an attribute for each series. Four languages were represented in the operas: ENGLISH, ITALIAN, GERMAN, and FRENCH. The language-based variables are defined as the number of operas in the particular language contained in the series. Because the length of the series is a straight linear combination of the number of operas in each language ($LENGTH=ENGLISH+ITALIAN+GERMAN+FRENCH$), only three of the languages were included (ENGLISH, GERMAN, and FRENCH).

Popularity measures: The second group of variables measures popularity of particular operas not accounted for by the popularity of the category. Four variables were considered in the attempt to capture the effect of subscription popularity on sales. A surrogate measure of overall popularity was obtained by counting the number of times each opera had been performed in the U.S. during the period of the study. Two different methods were used to standardize these raw frequency scores. First, an overall popularity measure for each opera was calculated by standardizing over all the operas in the set. Second, a type-based measure was created by standardizing the popularity of each opera within categories (i.e., using the category popularity mean and standard deviation).

The popularity of component operas was posited to affect subscription popularity in several ways. Three measures are based on standardized popularity scores across all categories: AVGOVPOP measures the effect of a series' average popularity on sales, MAXOVPOP measures the effect of the most popular opera in each series, and NOHITS counts the number of operas which had popularity scores more than one standard deviation above the mean for all operas ("hits"). MAXPOPLR is based on the within-category popularity measure and is equal to the highest score across the operas in each series. Although the variables describe different ways in which subscribers may consider the popularity of a series, these four measures are highly correlated due to their common origin (the number of performances of each opera within the United States). Therefore, only AVGOVPOP and

MAXOVPOP were included in the model; these measure the effect of a series' overall popularity and the additional effect of a particularly popular opera.

Variety-related Measures

Three types of variety measures were included in the regression model. These measures were inspired by Pessemier's (1985) concept of structural variety. In the absence of perceptual similarity data, objective attribute-based measures were developed. Pessemier's scheme measures variety based on orthogonal dimensions. However, the use of predetermined attributes in the current application rules out the use of independent dimensions. The variables in each group will be presented separately.

Type-related: Four variables were developed to measure the amount of type-related variety: VI, RELVAR, and VMOD/VHIGH. VI counts the number of different types found in the series, while RELVAR is based on the ratio of types to length of series. VMOD and VHIGH are dummy variables indicating moderate and high levels of variety (as represented by number of opera categories), respectively. The use of dummy variables might be necessary if the impact of variety is hypothesized to be nonlinear. Again, since the variables are highly correlated, only RELVAR was incorporated in the model presented here.

Serious/comedy: The next variable indicates the presence (or absence) of comedy in a given subscription series (DCOMEDY). While COMEDY measures the level of the attribute, DCOMEDY serves as an additional dummy indicator of variety. That is, DCOMEDY is equal to zero if all the operas are the same type (either comic or serious) and is equal to one if the series includes both comedies and serious operas.

Language-related: The last variety variable considers language and country of origin rather than period and musical style. The number of languages included in a series (NOLANG) was included as a direct measure of language variety.

Model

The full regression model was based on the complete set of variables described earlier and appears in Table 1. A reduced form of the model was also tested. Specific opera attributes (such as categories and languages) were not included in this regression, but the variety indices based on the categories (RELVAR) and languages (NOLANG) were retained. Thus, the second model is nested within the complete model and the marginal explanatory power of the omitted variables can be tested using an F-test.

Results

The pairwise correlations among the variables were examined for evidence of severe multicollinearity. Only 3 correlations exceeded .8: $r_{VMOD, VHIGH}$, $r_{VI, VHIGH}$, and $r_{FRENCH, FRANCE19}$. Only the last of these involve a pair of variables included in the model. As expected, the popularity measures (AVGOVPOP, MAXOVPOP, MAXPOPLR, and NOHITS) were also highly correlated, with pairwise correlations ranging from .55 to .76. The correlation between the two comedy variables ($r_{DCOMEDY, DCOMEDY}$) was .67. The variables most highly correlated with attendance were SUBTITLE ($r=.42$), WKENDMAT ($r=.35$), and AVGPRI (= $.28$).

Table 1
Regression Results for Full and
Reduced Models

Variable	Beta Coefficients	
	Full Model	Reduced Model
WKENDMAT	.36[a]	.36[a]
WKENDEVE	-0.03	-0.02
AVGPRICE	-0.1	-0.14
LENGTH	-0.32	-0.15
OPENING	-0.07	-0.07
PREMIERE	-0.03	-0.03
NEWPRODN	.26[a]	.24[a]
SUBTITLE	.37[a]	.39[a]
BAROQUE	0.07	
CLASSIC	0.11	
BELCANTO	0.13	
GERMANY19	0.02	
FRANCE19	0.4	
ITALY19	0.13	
VERISMO	0.17	
EARLY20	0.02	
CONTEMP	0.03	
OPERETTA	0.13	
COMEDY	0.1	
ENGLISH	0.04	
GERMAN	0.06	
FRENCH	-0.14	
AVGOVPOP	.32[a]	.38[a]
MAXOVPOP	-.29[a]	-.30[a]
RELVAR	-0.1	0.01
DCOMEDY	-0.07	-0.03
NOLANG	-0.17	-0.07

[a] Significant at $p < .05$ (two-tailed)

As anticipated, the three variety measures were moderately correlated, indicating that the dimensions are not truly orthogonal. However, the correlations ($r_{RELVAR,NOLANG}=.29$, $r_{RELVAR,DCOMEDY}=.03$, $r_{NOLANG,DCOMEDY}=.25$) were low enough to indicate that they are measuring distinct attributes.

Nested Models

The regression results for both models are presented in Table 1. The full model, which contains 27 independent variables, explained approximately 45% of the variance in attendance (adjusted $R^2=.36$). The reduced model (13 variables) explained 41% of the variance (adjusted $R^2=.37$). An F-test of the two models indicated no significant difference ($F_{14,163}=.68$). Thus, the addition of the type, language, and comedy variables did not increase the explanatory power of the model. The findings concerning the independent variables are discussed in more detail below.

Timing, pricing, & performance variables: Five variables were found to be significant predictors of subscription attendance (at a 5% significance level) in both models: WKENDMAT, NEWPRODN, SUBTITLE, AVGOVPOP, and MAXOVPOP. Results for the first variable indicate that weekend matinees are significantly more popular than other performance times. The inclusion of a new production within a subscription (NEWPRODN) also has a positive impact on attendance,

as does the use of subtitles (SUBTITLE). The last three variables are all indicators of overall (or historical) popularity. The average popularity of the series (AVGOVPOP) has a positive effect on attendance. However, the marginal effect of the most popular opera on attendance (MAXOVPOP) is negative, implying that one popular opera does not sell a generally unpopular series.

Variety-related measures: None of the variety measures reached significance at the 5% level in either model. The number of languages (NOLANG) had a significant negative coefficient in the full model (at a 10% significance level), but the coefficient in the reduced model was very close to zero.

Despite the good performance of the reduced model, the variety measures do not seem to improve the explanatory power. The six significant variables in both models are not directly related to the variety included in the subscription series.

Discussion

Individual Performance Vs. Subscription Models

The results of the current study appear to validate the findings of Holak et al. (1986), Cooper and Nakanishi (1978), and Weinberg and Shachmut (1978). Weekend matinees are popular with subscribers, as are new productions and subtitles. The latter two variables were not included in either of the previous studies. Unlike the Holak et al. study, the current research found no significant difference in attendance between weekday and weekend evenings. This may be due, in part, to regional differences between Dallas and the city used in this investigation.

As expected, the popularity measures were more important in the present setting because each subscriber was offered a choice of subscription series. In that respect, the situation represents a hybrid of the two groups examined by Holak et al. and the subscriber attendance results closely reflect the combined attendance results found in the earlier study.

Insignificance of Variety Measures

None of the variety indices produced any significant effects. Two arguments can be developed to explain these findings.

First, the measures themselves were developed based on available information according to concepts found in the literature (Pessemier 1985). However, the variables were developed without the use of perceptual data. Although face validity appears good (Martorella 1982), the convergent and predictive validity of these measures has not been tested. Thus, the variables incorporated in the model may not adequately represent perceived variety.

Second, the variety incorporated in subscription series may not be related to total attendance. Although individuals may consider variety in their choice of subscription bundles, heterogeneity of preferences may mask the effect at the aggregate level. The nature and level of this heterogeneity may be influenced by audience/population characteristics, such as sophistication and prior experience.

These alternative explanations imply different managerial responses. If the measures are not valid, then the impact of variety may be greater than the present study indicates. On the other hand, if the current measures are valid, then variety preferences are

sufficiently heterogeneous that no global recommendations can be made concerning variety and optimal subscription design.

These results suggest the need for additional validation of measures of the variety construct. The current study produces ambiguous findings concerning the predictive validity of the measure used here. More research is needed to develop and test the convergent and predictive validity of variety measures of the type proposed by Pessemier (1985).

Future Research

To address these issues, future research is being planned to investigate the concept of variety in opera subscriptions. Perceptual measures of structural variety will be tested at the individual level to establish their validity. These perceptual measures of variety will be compared to objective product attributes to provide a link to the current approach. In addition, structural and temporal variety in other types of product assortments will also be examined to develop an understanding of the nature and importance of variety in product assortments.

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The Relationship Between Prior Knowledge and External Search

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Abstract

A number of studies have explored the relationship between prior knowledge and search. These studies have produced results which indicate conflicting hypotheses. Part of this conflict may be attributable to the lack of clear and concise definitions of relevant constructs and the use of different measures to define them. In this study we examine the relationship between prior knowledge and external search, using different measures for each construct. We demonstrate that the relationship between the two constructs is sensitive to the measures employed.

Overview

In any buying situation, a consumer may acquire information from two sources. One source, commonly termed 'prior knowledge' refers to the inventory of information acquired prior to the purchasing situation and stored in memory. The second source of information, external search, embodies any source external to memory, such as store visits, friends and advertisements. Thus, the total amount of information available to a consumer making a purchase decision is the combination of both internal and external search. Intuitively, in a purchase situation, if a consumer already has a substantial amount of relevant information stored in memory, that consumer may be expected to engage in less external search compared to another consumer with a smaller inventory of prior knowledge. However, the empirical findings regarding the relationship between internal and external search have often yielded conflicting results.

A number of studies have examined the impact of the prior knowledge on external search (Punj and Staelin, 1983; Brucks, 1985) and choice processes (Bettman and Park, 1980; Park and Lessig, 1981; Johnson and Russo, 1984; Srull, 1983). Though these studies have made significant contributions to our understanding of the relationship between internal and external search, efforts to develop a theory which defines and explains the relationship between external search and prior knowledge are hampered by the multiplicity of measures used by different researchers and contradictory findings (Brucks, 1985). The purpose of the present study is to report some preliminary findings relating to the relationship between different measures of prior knowledge and external search. We intend to show that, in the absence of any succinct definition of prior knowledge and external search, the findings are highly measure sensitive.

First we present a number of hypotheses reflecting the nature of the observed relationships between knowledge and search found in various empirical studies. Then we discuss the various measures used to operationalize knowledge and search. Finally, we present empirical results showing the relationships between knowledge and search, using different measures for each construct.

Literature Review

The empirical studies on the relationship between prior knowledge, with or without experience, and

external search have produced very inconsistent findings. A review of the results of these studies leads us to extract the following hypotheses:

Hypothesis 1: Prior knowledge increases the ability to process new information, and, therefore, facilitates search. (Jacoby, 1978; Johnson and Russo, 1984; Jacoby et al., 1978)

Hypothesis 2: Prior knowledge reduces the motivation to search i.e. consumers having a high inventory of prior knowledge engage in less external search relative to those consumers with a low inventory of prior knowledge. (Katona and Mueller, 1955; Bucklin, 1966; Newman and Staelin, 1971, 1972; Moore and Lehmann, 1980; Bettman and Park, 1980)

Hypothesis 3: Prior knowledge about a product class generates efficiency in information processing, i.e. consumers having a high level of prior knowledge know which attributes to use in evaluation and are, therefore, quicker at eliminating irrelevant alternatives. The result would be less external search for those with high prior knowledge (Brucks, 1985).

Hypothesis 4: Prior knowledge exhibits an inverted U shaped relationship with external search. Consumers with little prior knowledge find processing of new information to be overwhelming. Consumers with some prior knowledge find that it facilitates the processing of further information and hence, the relationship between knowledge and search is positive at first. Consumers with high prior knowledge have less motivation to process new information. Consumers with high prior knowledge are also efficient and thus, engage in less external search. The overall relationship is, therefore, positive at first and then negative. (Bettman and Park, 1980; Johnson and Russo, 1984; Brucks, 1985).

These competing hypotheses, drawn from the empirical studies reviewed, clearly show that the relationship between prior knowledge and search is not straight forward. Knowledge affects search through ability, efficiency, and motivation to search. In an excellent discussion of the nature of the relationship between knowledge and search, Alba and Hutchinson (1987) propose that knowledge and search are multidimensional constructs. Perhaps, the hypotheses presented above would not be in conflict with each other if the dimensions of knowledge and search under study were well defined and measured. Hence, one approach to

understanding the seemingly conflicting results of different studies is to examine the measures used to operationalize knowledge and search. In the following section, we present a review of some major studies with specific reference to the measures employed.

Prior Knowledge

The construct 'prior knowledge' has been conceptualized in a variety of ways. Its domain has included familiarity with the product class, knowledge acquired without experience and knowledge acquired as a result of experience. Prior knowledge has been dichotomized into subjective knowledge and objective knowledge. The corresponding measures of this latent construct differ significantly across studies.

Bettman and Park (1980) have defined prior knowledge as knowledge acquired both through experience and knowledge acquired without experience. In their study, a sample of 62 housewives were classified into three categories. The low knowledge group consisted of those respondents who had never searched for, used or owned the product (microwave ovens). The moderate knowledge group had searched for and used the product but had never owned one. The high knowledge group consisted of respondents who had searched for, used and owned the product.

Punj and Staelin (1983) used experience and knowledge as two distinct constructs in their model of information search. Experience was captured in one construct, termed 'usable prior information'. This construct included experience with either the product class (automobiles) or with the purchase task. The construct was operationalized by using three measures - (1) satisfaction with previous cars, (2) time elapsed between purchase of the two most recently purchased cars and (3) number of used and new cars bought in the previous 10 years. The second construct, 'prior memory structure', reflected knowledge of the buying process and the product class. Prior memory structure also had three measures: (1) number of cars bought in the last 10 years, (2) knowledge about cars acquired through magazine readership, and (3) education level.

It is interesting to note that Punj and Staelin (1983) did not find a high correlation between the two constructs of experience and knowledge. Other researchers (Bettman and Park, 1980) have used a single construct to capture both experience and knowledge. Yet the desirability of distinguishing between experience and knowledge is illustrated by Punj and Staelin's (1983) finding that experience had a negative influence upon external search, whereas, knowledge had a positive but insignificant influence on external search.

Punj and Staelin (1983) tested the impact of knowledge alone on search through OLS regression. Prior memory structure was measured as the weighted average of (a) a linear combination of the three measures outlined earlier, and (b) a single item self-report measure of ability to judge cars. This second component is similar to Brucks' (1985) measure of subjective knowledge. Both the linear and inverted U relationship were tested. The curvilinear relationship reported by Bettman and Park (1980) did not come out to be significant, whereas prior memory structure, which was not significant in the multivariate setting (causal model), turned out to have a significant positive influence upon the amount of external search. Given the different implicit definitions of the construct developed by each of

the authors cited above, and the different measures employed, the conflicting results are not surprising.

Johnson and Russo's (1984) study deals with learning, i.e. the amount of information remembered after search, rather than search itself. The authors have labeled the knowledge construct 'familiarity', but the measures employed reflect knowledge, either with or without experience. The impact of learning, as a consequence of search, examined in this study provides some insights into the relationship between knowledge and search. Familiarity was operationalized using three measures: (1) self-report about product class knowledge measured on a 5-point rating scale (2) the number of cars owned and (3) the number of cars ridden in. Thus, Johnson and Russo's construct, "familiarity" reflects both subjective knowledge (Brucks, 1985) and experience with the product class.

Brucks (1985) argued that knowledge has two correlated dimensions - subjective knowledge and objective knowledge (Park and Lessig, 1981; Rudell, 1979) - and that these dimensions would have differing degrees of impact upon external search depending upon the usage situation. Objective knowledge was measured as the summated scale of responses to a variety of questions relating to the following: terminology relevant to the product (sewing machine), available attributes, criteria for evaluation, attribute covariation with prices and usage situations. Subjective knowledge was measured as the summed score of two items - one indicating self rating of product class knowledge and the other indicating product class familiarity. Brucks argued that subjective knowledge generates more confidence in an individual and helps eliminate alternatives, whereas objective knowledge increases one's ability to process attributes. In this context, it is relevant to note that Punj and Staelin (1983) found a correlation of 0.03 between 'usable prior information' and 'prior memory structure'. Based on the low correlation, the authors observed that "consumers who possess the ability to process new information do not necessarily have a substantial amount of directly relevant information already stored in memory" (p 377).

The measures of prior knowledge presented above capture different components of the construct of prior knowledge. Bettman and Park (1980) and Johnson and Russo (1983) measure a construct which reflects knowledge with or without experience whereas Punj and Staelin (1983) include ability in addition to knowledge with or without experience. Brucks' (1985) measures include experience with the product class in general but not with any specific brand, since the experimental setting was designed to control for the effect of substituting internal search for external search. To the best of our knowledge, there has been no replication of any of these studies. So, despite their importance, the contributions of the research which has been conducted to date are limited.

External Search

The crux of the difficulty in studying prior knowledge is the lack of a clear definition of the underlying construct. In the absence of a clear definition, measurement varies from study to study. The same is true of external search. In this section we present a brief review of the ways in which the external search has been operationalized in the relevant literature.

The Bettman and Park (1980) study was based upon protocol analysis. External search was measured by

providing a matrix of information through an information display board (IDB) and asking the respondents to verbalize while they engaged in search. The analysis of the protocols provided the basis for identifying the use of either prior knowledge or new information. However, as Brucks (1985) has pointed out, the use of IDB limits the number of brands and provides information in such a narrowly defined structure that it could potentially obscure the linkage between knowledge and search. The IDB methodology also limits external search to a single source of information. Johnson and Russo's (1983) study, also employing the IDB methodology suffers from similar limitations.

Punj and Staelin's (1983) operationalization of external search was based on a linear composite of 5 different measures. These measures are related to the time spent by the main shopper and other members of the household in different search activities, number of visits to dealers and the total number of search activities. Generally, researchers have typically used a limited number of components of the measure of search (see review by Newman, 1977). However, Punj and Staelin's construct of external search captures a larger domain of search.

Brucks' (1985) used four measures of search to test several different hypotheses. The first measure was related to the number of attributes. The second measure was related to the percentage of total inquiries which were directed towards dealer evaluation. The third measure, called the variability of search, was the standard deviation of the number of inquiries across alternatives. This measure was an indicator of efficiency in search; high variability meant concentration of search among fewer brands. The last measure, percentage of search spent on alternatives which were inappropriate for the intended use, was an indicator of inefficiency.

The review of the literature illustrates the fact that a number of different components are used to measure and implicitly define external search. Without a standard measure of search, one can expect conflicting results.

Research Design and Results

In this section, we propose to demonstrate the sensitivity of the relationship between knowledge and search to different measures of the two constructs. The data used for this study came from a set developed for a larger study of external search and its determinants. A mail survey was conducted in a metropolitan area in the north-east. A random sample of new car buyers were contacted three times by mail - prenotification, questionnaire and follow-up. Subjects were asked to provide information about different aspects of their knowledge and search activities prior to their new car purchase. The average time lag between purchase of a new car and responding to the questionnaire was four and a half month. The total number of usable responses was 1401.

In the following section, we outline measures of amount of external search and prior knowledge. Second, we examine the correlations between various measures. Finally, we present the empirical results showing the nature of the relationship between prior knowledge and external search using OLS regression.

Measures of External Search and Knowledge

Three measures of the amount of search were computed. The first measure of the amount of search was a comprehensive measure of the total time spent in

various search activities (TOTTIME). Search activities included in the measure were : (i) talking with friends and relatives (ii) reading books/magazine articles (iii) advertisements on TV/radio (iv) car ratings in magazines (v) reading manufacturer brochures/pamphlets (vi) showroom visits (vii) talking to sales people, and (viii) test-driving cars. Respondents estimated the time spent in each activity. The estimates were summated to yield the cumulative time spent in various search activities.

The second and third measures were single item measures frequently used by researchers in this area (see review by Newman, 1977; Punj and Staelin, 1983; Brucks, 1985): the number of dealers visited (NDEAL) and the number of models test-driven (NTEST).

To assess the performance of the comprehensive measure of search, a comparison was made with two weighted indices of search efforts reported in the literature (Bennett and Mandell, 1969; Duncan and Olshavsky, 1982). A weighting process, based upon the percentage of total time spent on each of the eight activities, yielded weights which were consistent with those reported by Bennett and Mandell (1969), and Duncan and Olshavsky (1982).

Three multiple-item measures of knowledge were computed. Brucks (1985) discussed the conceptual distinction between two components of knowledge - subjective and objective. The reasoning behind making this distinction is that a difference might exist between "what individuals perceive they know" and "what is actually stored in memory". This distinction is accepted and extended in this study. Following Brucks' definition, Subjective knowledge (SKNOW) is the measure of what individuals perceive they know. The same two measures used by Brucks and an additional statement using a 7-point Likert type scale formed the subjective knowledge scale.

However, we treat Objective knowledge as having two components - technical knowledge (OKNOWT) and product class knowledge (OKNOWG). The multiple-item technical knowledge scale measures respondents' expertise regarding cars. The scale reflects whether the respondents understand how a car functions, whether they work on cars themselves and friends' opinion of their expertise. The second dimension of Objective Knowledge a general product class knowledge reflects the familiarity resulting from usage, such as paying attention to a car's maintenance and mileage.

Table 1 shows the reliabilities of the three measures of knowledge. All three scales are unidimensional and the Cronbach alpha values are above the acceptable level for basic research (Nunnally, 1968).

Empirical Results

The correlation between the different measures of search and knowledge are shown in Table 2. It may be observed that the comprehensive measure of search, based upon the time spent on various activities, correlates only moderately (.32) with the two commonly used single item measures. All the correlation coefficients of different measures of knowledge and search are positive and significant indicating, in general, a positive relationship between different dimensions of search and knowledge. Subjective knowledge and technical knowledge have relatively lower correlation with the time measure of search than with the two single item measures.

The relationship between knowledge and search was first tested for curvilinearity. The equation used for the regression runs is:

$$\text{Search} = \alpha + \beta_1(\text{Knowledge}) + \beta_2(\text{Knowledge})^2 + \epsilon$$

If the inverted U hypotheses is valid, β_1 should be positive and significant and β_2 should be negative and significant, simultaneously. Table 3 summarizes the results of the inverted-U tests.

The number of dealers visited is significantly affected in an inverted U fashion by subjective knowledge at $\alpha < 0.05$. The number of models test driven is also significantly related to subjective knowledge in an inverted U fashion ($\alpha < 0.10$). However, the time spent in various search activities is not significantly influenced in an inverted U fashion by any of the three measures of knowledge. It is apparent that the inverted U hypothesis may be either accepted or rejected, depending on the measure of knowledge and search employed. In general, this study is not supportive of the inverted U relationship put forth as an integration of the facilitating and efficiency/complementary explanations.

It is important to recognize that a measure of search based upon the total time spent in various search activities, although operationally quite appealing, does not recognize the difference in the amount of information extracted from various sources for the same unit of time. It also does not reflect the differential effort required to collect information on beliefs regarding the relative reliability of different sources. Next, a simple linear regression model:

$$\text{Search} = \alpha + \beta (\text{Knowledge}) + \epsilon$$

was run for those cases where the inverted U hypothesis was rejected at $\alpha < 0.05$. A summary of the results of the simple regression runs is presented in Table 4. The beta values are positive and significant in all cases, lending support to the facilitating hypothesis. It will be recalled that OKNOWG represents what Brucks (1985) refers to as an experienced based measure. Should different people learn differently from the same experience, it is reasonable to expect that their behaviors will also be different. Hence, as compared to the other measures, OKNOWG should be less directly related to search behavior. In our investigation this idea is supported when search was operationalized in terms of NDEAL and NTEST.

Although F values for each of the eight equations are significant at $\alpha < .05$, the adjusted R² values are extremely low. The low degree of variance explained by knowledge is not inconsistent with the other widely cited studies (e.g. Punj and Staelin, 1983). We take these findings to indicate that although the various hypotheses presented in the literature capture some significant aspects of external information search, prior knowledge alone cannot explain search behavior.

Table 1
Scale Reliabilities For Knowledge

Scale	Number of Items	Cronbach Alpha (standardized)
Subjective Knowledge	3	0.86
Objective Knowledge (Technical)	4	0.77
Objective Knowledge (General Product Class)	6	0.65

Table 2
Correlation Matrix of the Search and Knowledge Measures

	TOT-TIME	N-DEAL	N-TEST	S-KNOW	OK-NOWT	OK-NOWG
TOTTIME	1.00					
NDEAL	0.32	1.00				
NTEST	0.33	0.58	1.00			
SKNOW	0.07	0.14	0.17	1.00		
OKNOWT	0.06	0.12	0.14	0.73	1.00	
OKNOWG	0.10	0.06	0.13	0.20	0.11	1.00

* All correlations are significant at $\alpha < 0.01$

Table 3
Regression Results for Inverted U Hypothesis

	Beta coefficients		Adjusted R-Square	F	Sig.
	Knowledge beta [1]	beta [2]			
I. Dependent Measure = Total Time spent in various search activities					
1 SKNOW	0.03(0.2)	0.03(0.2)	0.0030	2.94	0.05
2 OKNOWT	0.10(0.8)	-0.04(-0.3)	0.0026	2.68	0.07
3 OKNOWG	-0.22(-1.0)	0.33(1.5)	0.0108	7.91	0.00
II. Dependent Measure = Number of dealers visited					
4 SKNOW	0.41(3.0)*	-0.28(-2.0)*	0.0211	15.72	0.00
5 OKNOWT	0.27(2.2)	-0.16(-1.3)	0.0140	10.47	0.00
6 OKNOWG	0.35(1.7)	-0.30(-1.5)	0.0035	3.31	0.04
III. Dependent Measure = Number of cars test-driven					
7 SKNOW	0.41(3.0)*	-0.24(-1.8)+	0.0301	21.91	0.00
8 OKNOWT	0.19(1.5)	-0.05(-0.4)	0.0169	12.35	0.00
9 OKNOWG	0.30(1.5)	-0.17(-0.9)	0.0156	11.45	0.00

Figures in parentheses indicate t values.

* Significant at $\alpha < 0.05$

+ Significant at $\alpha < 0.10$

Table 4
Regression Results for Linear Hypothesis

	Beta coef-	Adjusted R-Square	F	Sig.
I. Dependent Measure = Total Time spent in various search activities				
1 SKNOW	0.07 (2.4)	0.0037	5.82	0.02
2 OKNOWT	0.06 (2.3)	0.0033	5.28	0.02
3 OKNOWG	0.10 (3.7)	0.0098	13.55	0.00
II. Dependent Measure = Number of dealers visited				
4 OKNOWT	0.12 (4.4)	0.0136	19.37	0.00
5 OKNOWG	0.06 (2.1)	0.0026	4.47	0.04
III. Dependent Measure = Number of cars test-driven				
6 SKNOW	0.17 (6.4)	0.0286	40.67	0.00
7 OKNOWT	0.14 (5.0)	0.0175	24.55	0.00
8 OKNOWG	0.13 (4.7)	0.0158	22.18	0.00

Figures in parentheses indicate t values.

All beta coefficients are significant at alpha < 0.05

Conclusion

The purpose of this investigation was to examine the relationship between prior knowledge and external search using multiple measures of these two constructs extracted from the relevant literature. In this study, the facilitating hypothesis, which posits a positive relationship between knowledge and search fails rejection consistently, irrespective of the measures used. Findings regarding the inverted U relationship between knowledge and search, however, are mixed. None of the several tests produced any finding supportive of Motivation or Efficiency hypotheses.

In view of the conflicting findings reported in the literature, including those of the present study, future researchers may consider incorporating the intervening constructs, viz. Ability, Motivation, and Efficiency, explicitly in the model in order to get a better understanding of the relationship between prior knowledge and external search.

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The Role of Involvement and Opinion Leadership in Consumer Word-of-Mouth: An Implicit Model Made Explicit

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Abstract

Models or frameworks of opinion leadership normally start with opinion leadership and postulate about its impact on recipients and on the success of new products. Researchers have been less interested in modeling opinion leadership itself. This paper examines the opinion leadership literature to determine how consumer behavior researchers have viewed opinion leadership at the sender level and identifies the model implicit in their work. This implicit model is expanded and tested empirically.

Introduction

The importance of interpersonal communication in consumer decision processes has been documented again and again in consumer behavior research, with numerous studies describing the frequency of consumer word-of-mouth and its influence on recipients (Arndt 1967; Katz and Lazarsfeld 1955; Leonard-Barton 1985; Technical Assistance Research Programs 1981). Even in this era of mass communications and mass advertising, it has been estimated that as much as 80% of all buying decisions are influenced by someone's direct recommendation (Voss 1984).

Opinion leaders are credited with a large amount of this interpersonal communication, and considerable research resources have been directed at identifying the demographic and social characteristics of opinion leaders (e.g. Myers and Robertson 1972; Summers 1970). Much less effort has been directed at identifying the motives underlying opinion leadership or understanding why opinion leadership occurs at all. In one of the few studies on this topic, Dichter (1966) suggested that involvement with the product class is an important determinant of word-of-mouth. While Dichter's analysis has stimulated little further research, a few early studies of opinion leadership that examined a potpourri of consumer variables found significant correlations between opinion leadership and product involvement, among other variables (Reynolds and Darden 1971; Summers 1970). Despite the rather wobbly theoretical and empirical underpinnings for the conclusion, however, involvement seems to be accepted as the motive for opinion leadership. Feick and Price (1987) summarize current thinking as follows:

the implicit assumption in examining the personal influence of opinion leaders is that they are motivated to talk about the product because of their involvement with it.... Product involvement remains the predominant explanation for opinion leaders' conversations about products (p. 84).

The essential behavior said to define opinion leaders is that they talk about products, yet the linkage between opinion leadership, as commonly measured, and actual word-of-mouth is not well understood. Only a few studies have measured word-of-mouth separately from opinion leadership, and even these studies have used

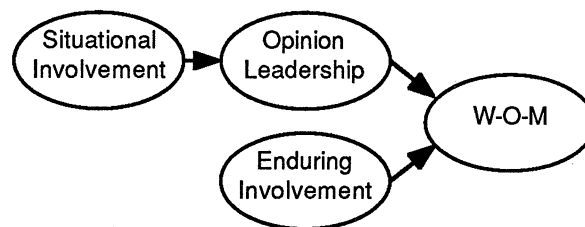
global measures of WOM such as asking "how much" respondents talk with others about a product category (e.g., Myers and Robertson 1972). Little if any research has examined the content of opinion leaders' comments or attempted to distinguish the conversational content of opinion leaders vis a vis consumers who are not opinion leaders.

Thus, while empirical evidence is not especially voluminous, the model of opinion leadership implied by consumer behavior writers can be represented as follows:



There are, however, some inadequacies with the implicit model of opinion leadership, primarily with respect to the involvement variable. Dichter (1966, p. 148), in his explanation of how product involvement results in word-of-mouth, suggested that "experience with the product (or service) produces a tension which is not eased by the use of the product alone, but must be channeled by way of talk, recommendation, and enthusiasm...." While any form of product excitement may result in WOM, it is questionable that all types of product "excitement" or involvement result in *opinion leadership*. Recent distinctions in the product involvement literature (Bloch and Richins 1983; Houston and Rothschild 1978) suggest that product involvement may be transitory (situational) or it may be long term and enduring. Because of the transitory nature of situational involvement, it is unlikely to result in a relatively permanent state such as opinion leadership. For this reason, the implicit model of opinion leadership is altered for purposes of this research. As shown in Figure 1, enduring involvement is expected to result in opinion leadership, which in turn results in word-of-mouth. Situational involvement is expected to result in word-of-mouth but to have no linkage with opinion leadership.

Figure 1
A Model of Opinion Leadership



The research reported here tests this revised model of opinion leadership. It also explicitly tests the link between opinion leadership and word-of-mouth, and does

so with specific rather than global WOM measures used in earlier research.

Methodology

Product Class

Automobiles were chosen as a suitable product class for this study for several reasons. First, it was desirable to use a product owned by a large percentage of the general population. Second, to assess situational involvement effects it was necessary to choose a product capable of eliciting high levels of situational involvement, at least at the point of purchase; prior research has shown this to be the case for automobiles (Hupfer and Gardner 1971; Richins and Bloch 1986). Access to a list of new car registrants permitted the identification of respondents who can be said to possess high situational involvement at the time of the survey. Finally, a product capable of eliciting high levels of enduring involvement among some but not all consumers was needed to provide an adequate range on the enduring involvement construct (Bloch 1981).

Data Collection

Data were collected using a mail survey with follow-up reminder. Questionnaires were mailed to a randomly drawn sample of 650 adult consumers living in a medium sized Sunbelt city; 217 of these returned usable forms. To provide responses along the complete range of the situational involvement construct, this general population sample was supplemented with a mailing to 125 new car owners identified from state motor vehicle registration office records. 53 usable forms were obtained from this sample, yielding a total sample size of 270. While the inclusion of the supplemental sample limits the external validity of the study, it should be noted that it is not the intention of this study to make specific generalizations from a sample to a population of interest but rather to understand underlying theoretical processes.

Measures

Opinion leadership was measured using four items taken from the King and Summers (1970) scale. A five point response format was used (Childers 1986) instead of the usual dichotomous response format. The items were summed to form a composite measure of opinion leadership. Cronbach's alpha equalled .82, indicating that the reliability of the scale was not compromised by using a shortened version.

Enduring involvement was measured using the 9-item version of the automobile involvement scale developed by Bloch (1981; see Richins and Bloch 1986). The summed scale had an alpha of .90.

The recent purchase of a new car was used as a dummy variable indicator of situational involvement. The short term temporal nature of situational involvement has been discussed in the literature (Antil 1984; Bloch and Richins 1983; Houston and Rothschild 1978). Following Richins and Bloch (1986), a two-month period was used to divide respondents into high and low situational involvement groups; those respondents who had purchased a new automobile within the two months prior to the study were placed in the high situational involvement category.

Types of word-of-mouth were measured using 13 items generated from depth interviews of adult consumers who described product-related conversations in which

they had recently participated. Questionnaire items were designed to measure frequency of different types of comments about automobiles. Respondents indicated the number of times they had discussed each topic within the last two weeks. Pretesting had revealed that respondents have some difficulty in recalling the precise number of comments made over a two-week period. However, respondents were generally confident that the ordinal relationship among the types of comments was correct. In other words, they believed their estimates accurately reflected which types of comments they made more frequently and less frequently than others.

Principal components analysis with oblique rotation resulted in four factors for word-of-mouth comments, which were labeled positive personal experience, advice-giving, product news, and negative word-of-mouth. Because of concern for the level of measurement, this analysis was performed twice, once using a matrix of Pearson r's and the second time a matrix of rank correlations. Results did not differ.

Positive personal experience word-of-mouth consists of comments in which respondents made favorable statements about their cars or described how or why they bought their cars. All these topics are related to respondents' personal experiences. Advice-giving word-of-mouth included comments in which respondents gave information about cars or advice about which car to buy. This factor seems to capture the dimension of word-of-mouth communication which has traditionally been studied in the opinion leadership literature (Jacoby 1974; Rogers and Cartano 1962). Product news includes comments about advances in car technology, car model differences, and similar topics. In contrast to the first word-of-mouth dimension, comments loading highly on this factor seem to be based less on personal experience with one's own car and more on general knowledge about automobiles as a product class.

Negative word-of-mouth consists of statements in which respondents said something unfavorable about their cars or described something they didn't like about them. Preliminary analysis showed that this type of word-of-mouth had no significant relationship with either involvement or opinion leadership, so only the first three word-of-mouth factors were used for the remainder of the study.

Items in each of the three remaining factors with loadings greater than .6 on the pattern matrix were summed to create the three word-of-mouth subscales, as follows:

subscale	# of items	alpha
personal experience	4	0.89
advice-giving	2	0.68
product news	5	0.83

Because the distributions of the word-of-mouth variables were highly skewed, square root transformations for these variables were used in subsequent analyses. The three word-of-mouth factors require a slightly more complex model, shown in Figure 2.

Analysis and Results

The path coefficients for the recursive model were estimated by ordinary least squares regression using path analysis techniques arising from the work of Simon and

Figure 2
Opinion Leadership Model with Three WOM Factors

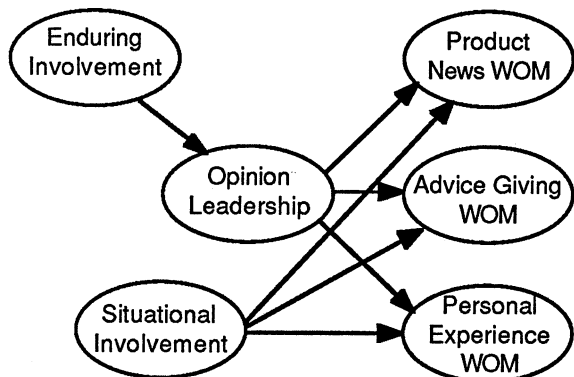
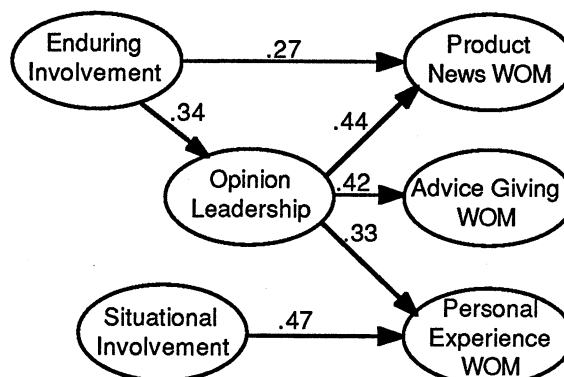


Figure 3
Revised Opinion Leadership Model



Blalock (see Asher 1983; Blalock 1964; Pedhazier 1982). In order to test whether the path coefficients assumed to be zero in the hypothesized model were indeed zero, these linkages were included in the initial test of the model. Regression results are shown in Table 1.

In interpreting regression results, statistical significance was not the only criterion used to determine whether a path should be included in the model. Because of the large sample size, even coefficients of small magnitude may achieve statistical significance. Therefore, an arbitrary cutoff was used in addition to the significance criterion. Path coefficients less than .20 (accounting for less than 4% of variance) were considered marginal and corresponding linkages omitted from the final model.

Regression results indicate that the hypothesized model needs to be modified. Two hypothesized linkages were not strong enough to be maintained. The path coefficients for hypothesized links between situational involvement and two forms of word-of-mouth (product

news and advice-giving) were less than .20; these links were eliminated. Regression analysis also revealed that an additional path needs to be added to the model. The coefficient for the path between enduring involvement and product news word-of-mouth was .24 ($p < .01$); a path connecting these two variables was added. The revised model reflecting these changes is shown in Figure 3.

The revised model was evaluated in terms of how well correlations derived from the model reproduce actual correlations among variables. Small discrepancies between derived and actual correlations are indicative of good fit. Table 2 shows the decomposition table for the final model. Model fit appears to be adequate, with an average discrepancy between derived and observed correlations of .10. In addition, the model fit measure recommended by Duffy et al. (1981, p. 479) was calculated and equalled .96, indicating that the model has an average of 4 percent error in predicting covariance of pairs of variables.

Discussion

The results of these analyses provide partial support for the involvement---> opinion leadership---> word-of-mouth model implied in the literature. Involvement does appear to be an important antecedent to opinion leadership, but it is necessary to specify that only *enduring* involvement results in opinion leadership. Situational involvement bears no relationship at all with opinion leadership. Likewise, the implicit relationship between opinion leadership and word-of-mouth is confirmed. It is not surprising that the relationship between opinion leadership and word-of-mouth is strongest for advice-giving, the form of word-of-mouth traditionally linked with opinion leadership. In these respects, the implicit model is correct.

Findings also indicate that the implicit model inadequately represents word-of-mouth communication. Word-of-mouth results from situational involvement not just from opinion leadership. Situational involvement is especially associated with personal experience word-of-mouth. For at least a brief period, consumers seem to engage in product-related conversations after the purchase of new automobile because of the excitement generated by the new item (Dichter 1966) or possible cognitive dissonance (Menasco and Hawkins 1978). This arousal dissipates over the course of time, however, and product-related word-of-mouth declines as well.

Table 1
Path Analysis Results[a]

Dependent Variable	Path Explanatory Variables	Coefficients Full Model	Path Coefficients R-Square	Trimmed Model	R-Square
Opinion Leadership (X3)	SI	.05	.12		.11
	EI	.33*		.34*	
Product News WOM (X4)	SI	.18*	.29		.26
	EI	.24*		.27*	
	OL	.34*		.35*	
Advice—Giving WOM (X5)	SI	.19*	.23		.18
	EI	.11			
	OL	.37*		.42*	
Personal Experience WOM (X6)	SI	.43*	.33		.30
	EI	.16*		.45*	
	OL	.23*		.28*	

[a] X1=Enduring Involvement (EI), X2=Situational Involvement (SI), X3 = Opinion Leadership (OL)

* $p < .01$

Table 2
Decomposition Table

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
	Observed	Direct	Indirect	Total	Spurious	Implied	Absolute
Bivariate Relationship	Correlation	Effect	Effect	Causal (B + C)	Correlation	Correlation (D + E)	Value of the Discrepancy (A - F)
X3X1	r31 = .34	p31 = .34	None	.34		.34	.00
X4X1	r41 = .39	p41 = .27	p31p43 = .12	.39	p43p31p14 = .03	.42	.03
X5X1	r51 = .27	None	p31p53 = .14	.14		.14	.13
X6X1	r61 = .30	None	p31p63 = .1	.10		.10	.20
X3X2	r32 = .10	None	None	.00		.00	.10
X4X2	r42 = .25	None	None	.00		.00	.25
X5X2	r52 = .24	None	None	.00		.00	.24
X6X2	r62 = .47	p62 = .45	None	.45		.45	.02
X4X3	r43 = .44	p43 = .35	None	.35		.35	.09
X5X3	r53 = .42	p53 = .42	None	.42		.42	.00
X6X3	r63 = .33	p63 = .28	None	.28		.28	.05
							1.10
Average Absolute Discrepancy							.10
Model Fit Measure							.96

Although the hypothesized model shown in Figure 2 is better than the implicit model in representing antecedents of word-of-mouth communications, it too is deficient. Counter to the hypothesized model, results indicate that the relationship between situational involvement and word-of-mouth other than personal experience word-of-mouth is weak. Subsequent to a new car purchase, consumers increase their talk about their own cars and how they shopped for them. Their discussions of other car-related topics such as product news and advice-giving also seem to increase, but only a little, as evinced by the small coefficients for the proposed paths between situational involvement and these forms of word-of-mouth. However, these coefficients did approach the cutoff point for inclusion in the model. Further research using other product classes is needed to determine more conclusively whether these paths should be deleted or retained.

Also counter to the hypothesized model, results indicate that enduring involvement is directly related to product-news word-of-mouth. The relationship between enduring involvement and word-of-mouth operates through opinion leadership for all three word-of-mouth content factors. However, for product news word-of-mouth, enduring involvement has a direct relationship with word-of-mouth in addition to its indirect effects through opinion leadership. As a result of interest and excitement in a product category, the product enthusiast is eager to discuss recent developments in a product category, beyond the opinion leadership role.

These product news discussions apparently contain elements not related to opinion leadership, and the existence of this direct link may be due in part to the nature of the traditional opinion leadership measure used in marketing studies. For example, the most commonly used opinion leadership scale (King and Summers 1970) has items that ask respondents whether they "tell others"

about the product class or if "others tell them" about the product class, with the former response indicative of high opinion leadership. Research has shown, however, that opinion leaders tend to *ask for* as well as give information (Reynolds and Darden 1971). Consumers highly involved in a product such as cars engage in (often fervent) conversations with others of like mind. These tend to be mutual, two-way conversations with each highly involved participant giving information to the other, receiving information, and comparing opinions. A highly involved consumer who frequently engages in such conversations, then, would answer at the midpoint of the scale, lowering his or her opinion leadership score. This suggests that such items on the long-accepted opinion leadership scales commonly used in marketing should be eliminated or revised when studying consumers who may be very high in enduring involvement and/or opinion leadership.

In sum, this study of opinion leadership for automobiles has shown that (1) enduring involvement appears to give rise to opinion leadership, (2) enduring involvement has links with some forms of word-of-mouth outside the opinion leadership construct, as normally measured in marketing, (3) situational involvement is not related to opinion leadership, (4) situational involvement has its strongest influence on word-of-mouth about one's own experiences, and (5) opinion leadership is most strongly associated with word-of-mouth comments that include information and advice-giving. Further research can determine the generalizability of these findings to other product classes. Additional work refining the most frequently used opinion leadership scale items and assessing their validity at the extreme end of the construct is also warranted.

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A Comparison of Involvement Measures for the Purchase and Consumption of Pre-Recorded Music

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Abstract

Five measures of music involvement, based on work with both traditional products, music, and aesthetic activities, were compared for reliability and validity in relation to consumer decision-making variables. These measures tapped the importance of music to the individual, listening and purchase behavior, and the degree to which the music was experienced by respondents. The results showed that the experientially-based measures were superior to more traditional gauges of involvement. The implications of this finding, and its generalizability to other aesthetic activities, are discussed.

Introduction

The concept of involvement has received substantial attention in the social psychology and marketing literatures during the past 40 years. Consumer involvement clearly has implications relative to the consumer decision-making process and marketing strategies developed based on this process. Empirical findings indicate that level of this construct has an impact on purchasing effort, cognitive and evaluative complexity, attitude-behavior relationships, effects of information on attitude formation, process of advertising evaluation, and recall. For an excellent review of research in this area, see Slama and Tashchian (1985a) and Zaichkowsky (1985).

Recently, several attempts have been made to define and operationalize this construct with three separate measures of involvement published in the marketing literature during the past two years. These measures are primarily concerned with types of products emphasized in conventional consumer research. Holbrook and Hirschman (1982), however, have hypothesized that some products, such as leisure activities, aesthetic goods, sporting events, etc., may entail a different decision-making process from that suggested by the information-processing paradigm. These differences imply involvement relative to aesthetic goods may manifest itself in a manner that is different from involvement with tangible products and conventional purchasing activities. The purpose of this research is to develop involvement scales that are applicable to aesthetic products such as popular music.

Recent Measures of Consumer Involvement

One operationalization of the involvement concept, developed by Slama and Tashchian (1985b), reflects consumers' involvement with purchasing activities in general. Purchasing involvement, defined as "a general measure of the self-relevance of purchasing activities to the individual" (p. 73), is based on Kassarian's (1981) Consumer Trait Theory which suggests there are individual differences among people which make some more interested, concerned, and involved in the consumer decision process regardless of the specific product or situation. Thus, purchasing involvement deals with interest in shopping itself,

which transcends the particular product being purchased or the specific situation.

A different conceptualization of involvement is related to Rothschild's (1979) notion of enduring involvement, which is the degree of interest in a particular product category that the individual brings into a particular situation. Zaichkowsky (1985) developed an involvement measure, the Personal Involvement Inventory (PII), to capture this aspect of involvement. While the PII was designed to measure involvement with a product class, Zaichkowsky presented evidence indicating the scale may be sensitive to different purchase situations and suggested it could be modified to apply to marketing communications.

The third involvement scale, developed by Laurent and Kapferer (1985), also reflects enduring involvement with a product category. This instrument measures four different facets of involvement: (1) perceived importance of the product and perceived importance of negative consequences of a mispurchase; (2) perceived probability of making a mispurchase; (3) hedonic value and/or emotional appeal of the product class; and, (4) perceived symbolic value of the product, its purchase, or its consumption.

Involvement With Aesthetic Products

Holbrook and Hirschman (1982) have hypothesized that *type* of involvement (as opposed to *level* of involvement) may vary depending on the product category being considered. They suggest the information processing perspective, and conventional consumer research, ignores the experiential view which encompasses consumption phenomena such as leisure activities, aesthetics, symbolic meanings, emotions, play and artistic endeavors.

Both the goals of consumption and the decision-making process leading to purchase may vary between traditional and aesthetic products. According to Holbrook and Hirschman's (1982) experiential perspective, consumers may appreciate the product for its own sake apart from any utilitarian functions performed or tangible benefits gained through product use. The consequences of experiential consumption are fun, amusement, fantasy, arousal, sensory stimulation, and enjoyment. Furthermore, the experience of actual consumption may have a greater impact on consumer decision making for many aesthetic products than it does for conventional products. For example, an individual will typically "consume" a song (hearing it on the radio, perhaps) prior to making a purchase and that experience will influence the subsequent purchase decision. Thus, the events surrounding consumption may warrant greater attention when considering experiential products.

While the three involvement scales discussed above measure different aspects of consumer involvement, all implicitly deal with the types of purchasing activities and goods/services emphasized in the currently prevailing information processing perspective of consumer behavior. Zaichkowsky (1985) used instant coffee, laundry detergent, and color

television sets to test the discriminating ability of the PII. Laurent and Kapferer (1985) validated the Consumer Involvement Profile using fourteen product types in the categories of household appliances, personal care products, food items, and clothing. The criterion validity of both of these scales was assessed by associating involvement scores for products with variables such as extensiveness of the pre-purchase decision process, scope of information search, and product differentiation within the category. While Slama and Tashchian's (1985) purchasing involvement scale transcends specific products and situations, the actual measure emphasizes traditional pre-purchase factors and intervening variables such as information acquisition, comparison shopping, price orientation, and risk perception.

Since type of involvement may vary depending on type of product (Holbrook and Hirschman 1982), these scales may not be applicable to aesthetic products. Recent research suggests purchase and consumption behavior for some product classes, including the performing arts, may differ substantially from behavior associated with traditional products such as package goods and consumer durables. Hirschman and Holbrook (1982) suggest these products prompt a hedonic response when used by consumers and require measures of the multisensory, fantasy, and emotive aspects of the consumption experience. In addition, measures of the experiences derived from product usage may be more relevant for studying decision-making relating to hedonic consumption situations than the traditional measures utilized. Thus, measures emphasizing emotional and experiential aspects of involvement may be required to adequately address the impact of this construct on consumer responses to hedonic products.

Research Purpose

The purpose of this research was to develop and test involvement measures relating to the purchase and consumption of popular music. Five involvement scales, described in the methodology section of this paper, were developed based on a review of both marketing and music psychology literatures. These involvement measures are then evaluated and compared in terms of the four components of construct validation discussed by Peter (1981): reliability, convergent validity, discriminant validity, and nomological validity.

Methodology

Music Involvement Measures¹

Enduring Music Involvement. This measure, designed to assess the importance of music to an individual, is based on Rothschild's (1979) enduring involvement concept. Development of this scale began with three focus groups. Participants were undergraduate students who perceived themselves to be more interested in music than their peers. Discussion centered around how group members experience music, e.g., why is it important, what role does it play in your life, what does music do to and/or for you. Video tapes of the focus groups were reviewed to develop an initial battery of scale items. These items were refined and edited resulting in an instrument with 21 Likert-type statements. This

scale was then pretested among 65 undergraduate students, and the internal consistency assessed using Cronbach's alpha. As a result, two items were eliminated and a Cronbach's coefficient alpha of .932 was obtained for the remaining 19 items. Since Nunnally (1967) stated coefficients of .80 or greater are sufficient for basic research, the reliability of the enduring music involvement scale was deemed adequate.

Subjects in the main experiment responded to each of these 19 items on a five-point scale anchored by "strongly agree" and "strongly disagree." Responses were summed to calculate an overall enduring music involvement score for each subject².

Behavioral Involvement. The music literature suggests a general measurement approach to establish music involvement that is tied to self-reports of music participation. Dixon (1980) developed a scale for measuring music involvement that gauges concert attendance, hours spent listening to various audio media, and purchases of music products such as pre-recorded tapes and records. This measure reflects a behavioral manifestation of involvement much like that suggested for more traditional products by Engel and Blackwell (1982).

Two facets of behavioral involvement were measured, active and passive. Active involvement was based on subjects' reported attendance at non-dance musical concerts and purchase of music records, pre-recorded tapes, and discs. Passive involvement refers to the amount of time subjects indicated they spend listening to music on radio, television, and records/tapes/discs. Two versions of each question were developed varying the time period covered. One form was administered during a pre-experiment survey and the other approximately three weeks later so that test/retest reliabilities could be ascertained.

Experiential Involvement. A more recent perspective deals with experiential aspects of product consumption (Hirschman 1984). This experiential view suggests the objective of some consumption situations may be to stimulate sensory activity, to stimulate cognitive activity, or some combination of both. Two experientially-based involvement measures were generated to capture both facets of this perspective. These scales are song-specific and related to Rothschild's (1979) notion of situation involvement. Scale items, suggested in work by Swanson (1978), were modified based on comments of focus group participants. The first of these measures, called sensory involvement, probes the sensory relationship between the user and a piece of music. The second experiential measure, analytic involvement, assesses the degree to which a song stimulates cognitive activity within the listener.

To assess experiential involvement, subjects responded to seven statements on a seven-point scale anchored by "strongly agree" and "strongly disagree" after listening to each test song.

Additional Evaluative Measures

Distractibility. A three-item scale was developed to ascertain the degree to which subjects are distracted by music while they are performing other tasks such as studying. Ridgeway (1976) suggested that individuals who are highly involved with music maintain a greater

¹ In order to conserve space, the actual scales have not been included in this paper. For a copy of the measures, please contact the authors.

² For all variables measured in this research, individual items were coded/recoded so higher numbers indicate "more of" the quality being measured.

degree of absorption in the music during usual listening experiences. Since people have limited processing capacity, it follows that highly involved individuals would devote a greater proportion of this capacity to background music and a smaller proportion to the task which should lead to a higher perception of distraction.

Attention. The amount of attention subjects pay to music was assessed relative to both music in general and to each of two test songs. Dixon (1980) suggested more highly involved individuals pay more attention to music than do less highly involved individuals. In addition, Greenwald and Leavitt (1984) maintain that audience involvement in a communication is related to the degree of attention paid to and the amount of processing capacity allocated to that communication by the individual. Thus, individuals who are more highly involved with music are expected to pay more attention to music compositions.

To determine the amount of attention paid to music in general, respondents were asked, "Of the total time you spend listening to music, what percent is spent 'really listening'?" (Dixon 1980). This question was asked on two occasions--during the pre-experiment survey and after the experiment was completed--in order to determine test/retest reliability of the measure. Subjects also responded to the statement, "I paid a lot of attention to this song," on a seven-point scale anchored by "strongly agree" and "strongly disagree" for each of the two test songs.

Affect/Liking. Affect was measured with Huber and Holbrook's (1979) Index of Global Evaluation. This metric was computed by summing responses to a list of nine bipolar adjectives separated by a six-point scale.

Purchase Intent. Subjects used a seven-point strongly agree/strongly disagree scale to respond to the statement, "I would purchase this song the next time I shop for music."

Subjects

The sample consisted of 110 volunteer undergraduate business students attending a large southeastern university. Subjects were enrolled in an introductory management class and received extra credit for their participation in the study. None of the focus group participants or enduring involvement measure pretest subjects were included in this sample.

Music Selection

The choice of the four songs used in the main experiment was based on the goal of having music that was unfamiliar to the subjects and of good professional quality. After a pool of rock-oriented songs was initially chosen by the experimenters, the songs were pretested on several groups of subjects with the same background as the subjects used in the main experiment. This reduced the total to eight songs that were judged approximately average on a seven-point like/dislike affect scale. This was done to eliminate "floor" and "ceiling" effects on the evaluative measures. None of the songs were correctly identified by these subjects.

Four of the original group of eight songs were randomly chosen to be the "pre-exposed" group. These four were recorded on a tape in a randomly determined order. Each selection was followed by an announcement of the song title and artist in a manner similar to that of a disc jockey. This entire sequence of songs was recorded twice resulting in a tape approximately 28 minutes in length. The two test songs were randomly

chosen from the four in the pre-exposure group. An additional set of tapes consisting of these two songs was produced for the evaluation portion of the experiment. The order of the songs was varied on these tapes to eliminate the impact of order effects.

Procedure

Approximately three weeks prior to the main portion of the experiment, the enduring music involvement questionnaire was administered to the subjects during their normal class period by a faculty member not associated with this research. Subjects were then recruited for the main portion of the experiment by one of the authors at the end of class. The subjects were not told the purpose of the experiment nor its connection with the questionnaire they had filled out earlier. This procedure was followed to minimize the association between the music questionnaire and the subsequent experiment.

Four subjects were scheduled for each experimental session. In order to present the music in a relatively realistic environment, subjects were assigned tasks to perform after arriving at the test facility. Individuals in the "pre-exposure" sessions listened to the pre-recorded tape of four songs played twice; individuals in the control sessions worked on the tasks for the same amount of time, but did not listen to the music. After working on the tasks, subjects filled out a questionnaire eliciting information about the task to disguise the fact that the music was the focus of the research. Since neither exposure to the music while performing the task nor the various task variables had an impact on the proposed relationships, these variables were dropped from the subsequent analyses.

After completing the first portion of the study, subjects were taken to another room to complete the experiment. Each of the four subjects was seated in an individual carrel to avoid contamination of the results due to respondent interaction. The experimenter then played the first test song in its entirety. After listening to the song, subjects completed the affect, attention, experiential involvement and purchase intent scales for that song. This procedure was repeated for the second test song. These two songs are referred to as Song 1 and Song 2 in the subsequent analyses. Finally, subjects answered questions eliciting behavioral involvement.

Results

Reliability of the Involvement Measures

Table 1 present Cronbach's coefficient alphas, item-to-total correlation ranges, and test/retest correlations for the various music involvement measures. These statistics will be used to assess the reliability of the measures.

Internal consistency was estimated using Cronbach's coefficient alpha and item-to-total correlations for each scale. A large coefficient alpha indicates the set of items performs adequately in capturing the construct which motivated the measure, and relatively large correlations of each item to the total score for the measure indicate each item contributes equally to the common core of the construct (Churchill 1979).

It is apparent from Table 1 that the enduring music involvement and experiential involvement measures meet these criteria to a greater extent than do the behavioral involvement measures. Cronbach's

Table 1
Music Involvement Reliability Scores

	Coefficient Alpha	Item-To-Total Correlation Range	Test/Retest Correlations
Enduring Music Involvement	.885	.29 to .64	NA
Active Behavioral Involvement			.129*
Pre-experiment survey	NA	.55 to .97	
Post-experiment survey	NA	.11 to .99	
Passive Behavioral Involvement			.236**
Pre-experiment survey	.666	.32 to .56	
Post-experiment survey	.619	.28 to .59	
Sensory Involvement			
Song 1	.932	.74 to .87	NA
Song 2	.887	.63 to .86	NA
Analytic Involvement			
Song 1	NA	.89 to .90	NA
Song 2	NA	.85 to .86	NA

* $p < .10$ ** $p < .01$

NOTE: Cronbach's coefficient alpha is not available for active behavioral involvement and analytic involvement because these scales have only two items each. Test/retest procedures were conducted only for behavioral measures.

coefficient alpha, where applicable, is substantially higher for the non-behavioral involvement measures than for the behavioral scales (.885, .932 and .887 versus .666 and .619). Furthermore, the song-specific measures exhibit more consistent and generally larger item-to-total correlation ranges than do the behavioral measures. While the item-to-total correlations for enduring music

involvement are not as high as those for the sensory and analytic involvement scales, a coefficient alpha of .885 is considered acceptable for a scale in its developmental stages (Nunnally 1967).

Test/retest correlations for the behavioral involvement measures, while significant, are relatively small ($r = .129$, $p < .10$ and $r = .236$, $p < .01$). These low correlations question the stability of the behavioral scales.

Relationships Among Measures

As noted earlier, in addition to demonstrating internal consistency, an appropriate measure of a construct should (1) provide evidence of convergent and discriminant validity and (2) behave as expected relative to other measures (Churchill 1979). Tables 2 through 5 exhibit correlations among the involvement measures and additional evaluative variables.

Table 2 presents correlations among the involvement measures. Correlations between song-specific scales and the enduring and behavioral measures was small and nonsignificant in all cases. This provides evidence that involvement with music may have both enduring and situational components. While enduring music involvement is significantly correlated with the pre-experimental survey active and passive behavioral measures ($r = .351$ and $r = .203$, $p < .01$), it is not correlated with the post-experiment measures ($r = .019$ and $r = .097$). In addition, the behavioral measures are more highly correlated within survey instrument than across questionnaires ($r = .202$ and $r = .136$ versus $r = .036$ and $r = .046$). These results suggest subjects may have been responding to the behavioral questions with a consistency bias.

In terms of song-specific measures, sensory involvement is significantly correlated with analytic involvement within songs, but not across songs. In addition, the correlation between the sensory measures across songs is small and not significant ($r = .076$) while the analytic measures are highly correlated across songs ($r = .456$, $p < .01$). Apparently, experiential involvement has both sensory and analytic aspects, however, the sensory component performs better in discriminating between songs.

Table 2
Correlations Among Music Involvement Measures

	Pre-ABI	Post-ABI	Pre-PBI	Post-PBI	S11	S12	A11	A12
Enduring Music Involvement	0.351**	0.019	0.203**	0.097	0.071	0.040	0.018	0.063
Active Behavioral Involvement								
Pre-experiment survey [Pre-ABI]		0.129	0.202**	0.036	-0.068	0.115	0.017	-0.035
Post-experiment survey [Post-ABI]			0.064	0.136	-0.041	-0.104	-0.163	-0.152
Passive Behavioral Involvement								
Pre-experiment survey [Pre-PBI]				0.236**	-0.053	0.080	-0.013	0.130
Post-experiment survey [Post-PBI]					-0.033	0.144	0.040	0.083
Sensory Involvement								
Song 1 [S11]						0.076	0.482**	-0.039
Song 2 [S12]							0.167	0.398**
Analytic Involvement								
Song 1 [A11]								0.456**
Song 2 [A12]								

* $p < .05$ ** $p < .01$

It was hypothesized that individuals who are highly involved with music would spend a larger proportion of time "really listening" and would be more easily distracted by music while performing tasks. Table 3 presents correlations between the universal music involvement measures and the non-song-specific attention and distractibility scales. As expected, enduring music involvement is positively correlated with attention ($r=.357$ and $r=.267$, $p<.01$) and negatively correlated with distractibility ($r=-.205$, $p<.01$). The relationships between these scales and the behavioral measures are significant ($p<.05$) in only five of twelve correlations. The significant relationships are in the anticipated direction, however. Overall, these results suggest music involvement is positively related to attention and negatively related to distractibility as expected, and that the enduring music involvement scale is a better measure of the construct than the behavioral involvement scales.

Table 4 presents correlations between the two experiential involvement measures and song-specific attention and affect. Sensory involvement is significantly correlated ($p<.01$) with attention and affect within a song, but shows small and nonsignificant correlations with these scales across songs. This provides evidence of convergent and discriminant validity for the sensory involvement measure. While analytic involvement is significantly correlated ($p<.01$) with attention and affect within song, in one instance a significant correlation ($p<.05$) is exhibited across song measures (analytic involvement Song 1 with attention Song 2). This provides further evidence that the analytic involvement measure lacks discriminating power.

Table 5 presents correlations between the involvement measures and intent to purchase each of the two experimental songs. One would expect an involvement measure to bear a strong relationship to purchase intent. Both of the experiential involvement measures were significantly associated with purchase intent for the corresponding song ($p<.01$), while the universal involvement measures exhibited significant relationships in only three of ten comparisons. In addition, these three correlations were relatively small ($r=.180$, $r=.211$, and $r=.239$). These findings suggest music involvement has both stimulus-specific and enduring components, and that the song-specific

Table 3
Correlations With Universal Measures

	Pre-Attn	Post-Attn	Distractibility
Enduring Music Involvement	.357**	.267**	-.205**
Active Behavioral Involvement			
Pre-experiment survey	.181*	.061	-.323**
Post-experiment survey	-.104	.086	-.065
Passive Behavioral Involvement			
Pre-experiment survey	.160*	.158*	-.097
Post-experiment survey	-.109	.402**	-.036
Attention (General)			
Pre-experiment survey [Pre-Attn]		.345**	.015
Post-experiment survey [Post-Attn]			.034

* $p < .05$
** $p < .01$

Table 4
Correlations With Product-Specific Measures

	Attn1	Attn2	Af1	Af2
Sensory Involvement				
Song 1	.579**	.004	.772**	.034
Song 2	.027	.469**	.04	.677**
Analytic Involvement				
Song 1	.553**	.179*	.464**	.119**
Song 2	.107	.534**	-.11	.347**
Attention (Song-Specific)				
Song 1 [Attn1]		.310**	.660**	.069
Song 2 [Attn2]			.031	.609**
Affect				
Song 1 [Af1]				.038
Song 2 [Af2]				

* $p < .05$
** $p < .01$

Table 5
Correlations With Purchase Intent

	Purchase Intent	
	Song 1	Song 2
Enduring Music Involvement	.159	.069
Active Behavioral Involvement		
Pre-experiment survey	.180*	.239**
Post-experiment survey	.008	-.046
Passive Behavioral Involvement		
Pre-experiment survey	.026	.125
Post-experiment survey	-.023	.211*
Sensory Involvement		
Song 1	.659**	-.005
Song 2	.131	.663**
Analytic Involvement		
Song 1	.411**	.058
Song 2	.101	.239**

* $p < .05$
** $p < .01$

measures may be more appropriate than the general measures in determining consumer responses to new music.

Summary and Conclusions

Five music involvement measures were developed based on previous work in music and consumer research concerning aesthetic products. Three of these measures were designed to ascertain the importance of music in an individual's life. These five measures were then experimentally tested to evaluate relative reliability and validity against consumer decision-making variables.

The two behaviorally-based involvement measures were shown to have relatively poor internal reliability and small test/retest correlations. Two factors may account for the instability of these measures. First, the test/retest items were not identical but varied in terms of the time period covered and a potential history effect

may have occurred. For example, one format asked for record purchases within the past year while the other requested this information for the past month. Situations such as purchase of a new stereo system, receipt of extra money from parents, sales at record stores, unusually high expenses, etc., could serve to inflate or deflate expenditures on records for a particular month. On the other hand, self-reports based on a year-long period are clearly suspect in terms of accuracy. The second factor is the previously noted potential consistency bias in the responses. The behavioral data recorded in the pre-experiment survey, which also collected enduring music involvement information, was significantly correlated with that measure. In addition, the information collected within a survey instrument was more strongly correlated than the data gathered between instruments. The literature on self-report inaccuracy (e.g., see Nisbett and Wilson 1977) is clearly relevant.

Along with demonstrating greater internal consistency, the enduring music involvement measure performed better than the behavioral measures in terms of its relationship to other variables. Enduring music involvement was found to be positively associated with the proportion of time an individual spends really listening to music and negatively related to propensity to be distracted by music while doing other tasks. The behavioral measures exhibited inconsistent relationships with these two variables.

The song-specific experientially-based involvement measures had a significant and strong relationship to evaluative and purchase intent measures for the corresponding test songs. However, sensory involvement appears to perform better at discriminating between songs than does analytic involvement. Hirschman (1984) suggests that overall capacity and/or desire to obtain sensory and/or cognitive experiences may be genetically determined and these inherent differences may result in determining individual capacity for experiential consumption activities. Future research should assess this phenomenon in relation to music. This study was conducted with a sample of students pursuing degrees in business. Perhaps individuals with other interests, e.g., art or theater students, would respond to these questions differently.

Unlike more traditional products, music involvement appears to be largely an experientially-based phenomenon. This finding may be similar to involvement with other aesthetic activities such as movies and sports, although the actual scales may not be applicable. On the other hand, the difference between music and other products may be the result of the relative influence of the consumption experience on consumer decision-making in music. Future research is now underway to better understand the generalizability of these findings.

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Separating Brand-Choice Involvement from Product Involvement Via Consumer Involvement Profiles

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Abstract

Laurent and Kapferer (1985) proposed a four-faceted *Consumer Involvement Profile* as a way of operationalizing consumers' involvement in products. Two gaps in that profile are addressed in this research: (a) expansion of Laurent and Kapferer's "illustrative" scale items into full scales, and (b) operationalization of the four facets separately at the product- and brand-choice levels.

Using confirmatory factor analytic procedures, the convergent and discriminant validity for the proposed scales is shown to be supported, and directions for future research are suggested.

Introduction

One of the welcome, recent developments in research on consumer involvement (which for a long time was an elusive concept) is the appearance of empirical scales to measure that concept. One such scale was developed by Laurent and Kapferer (1985). These authors suggest a four-faceted involvement scale and present data which show that different facets have differing implications for specific consumer behaviors. While we find this scale appealing, we believe that Laurent and Kapferer do not address the question of whether their facets reflect product-class involvement or brand-choice involvement or both. Our analysis will show that two of the facets reflect product-involvement, and two reflect brand-decision involvement. The purpose of this research is to propose (and empirically test) the measures of each of the four facets separately for product- and brand-choice involvement. Because these two "forms" of involvement are distinct but not unrelated (Bloch 1983), our data will allow examination of relationships among the facets both within and across the two forms.

This paper is organized as follows. First, the contents of Laurent and Kapferer's scale are discussed with a view to identifying the form (product- or brand-choice) of involvement each facet measures. Next, parallel measures for each facet are developed for each of the two forms. Third, empirical data, collected for beer, are analyzed to demonstrate the structure of the measures, and also the relationship of each measured facet to selected criterion variables. Finally, implications of our findings for future theoretical and applied research are outlined.

Theory

Product- and Brand-Choice Involvement

A number of involvement researchers have distinguished product involvement from brand choice involvement (Bloch 1983, Bloch and Richins 1983, Zaichkowsky 1985, 1986). Product involvement is the degree of interest of a consumer in a product category on an on-going basis. Brand-choice involvement is the motivation of a consumer to make the right choice. As Bloch and Richins (1983) point out the two are not identical. For example, a consumer is seldom involved in the washing machine on an enduring basis, but he/she

is likely to be very involved in making the brand selection.

Houston and Rothschild (1977) make a distinction between enduring- and situational-involvement and view the former as a mean level of involvement across situations, while the latter (i.e., situational involvement) provides temporary, situation-bound deviations from the mean level. It is possible, then, that for a consumer, and for a given product, the enduring involvement is low, but brand-choice involvement (which is a form of situational involvement) is high. Thus it would seem useful to distinguish the two forms of involvement and operationalize Laurent and Kapferer's profile separately at the two levels.

Laurent and Kapferer's Involvement Profile

Laurent and Kapferer (1985) propose 4 facets, namely, (1) the importance of the product, (2) perceived risk associated with the product purchase, which in turn has two subfacets: (a) perceived importance of negative consequences from a poor choice, and (b) the perceived probability of making such a mistake; (3) the symbolic or "sign" value, and (4) the hedonic value of the product. In the factor analysis of their data, they found that the perceived product importance and perceived importance of negative consequences of a mispurchase loaded on a single factor which they termed "imporisk." Risk probability formed a separate factor, while sign value and pleasure value each provided one additional factor. These four factors are then deemed by Laurent and Kapferer as constituting the *consumer involvement profile*.

The question is, which involvement does this profile tap -- product-category involvement or brand-choice involvement? Because Laurent and Kapferer base their framework, in large part, on Houston and Rothschild's paradigm (a paradigm that incorporates both forms of involvement), Laurent and Kapferer's *consumer involvement profile* (CIP) contains measures both of product category and brand-choice involvement. Houston and Rothschild separately identify the two forms, but Laurent and Kapferer do not. This is a task addressed below.

To discern the form of involvement (product- or brand-choice-) being tapped by the four facets, both the description and the corresponding measurement items for each are reviewed below. Laurent and Kapferer present only illustrative items; therefore, an assumption was made that other items were conceptually identical. That is, if the illustrative item reflects product-category- (brand-choice) involvement, the omitted items also reflect product-category- (brand-choice-) involvement.

To recapitulate, two of the four facets (perceived importance, and hedonic value) are conceived by Laurent and Kapferer at the product level, and one facet, namely, perceived risk is conceived at the brand-choice level. The fourth facet -- sign value -- is defined at an all inclusive level so that it can refer to product- or to brand-choice involvement; however, it seems to have been measured only at the brand-choice level.

Developing Separate Measures for Product- and Brand-Choice Involvement

Of interest here is the development of measures of each of the four facets for product involvement and, separately, for brand-choice involvement, based on Laurent and Kapferer's illustrative measures. Because Laurent and Kapferer have not presented the complete measurement instrument, the proposed operationalizations may also serve to fill this gap.

Hypotheses

To establish the separation of facets across the two forms of involvement, we propose to conduct tests of trait validity and discriminant validity just as Laurent and Kapferer (1985) did. For trait validity, items purported to measure a construct should measure a single dimension, and for discriminant validity the two scales should not correlate highly (Campbell 1960). Our hypothesis is: Each of the four facets are separate constructs across product involvement and brand choice involvement. This hypothesis entails four subhypotheses:

- H1. *Perceived importance of the product* is a separate construct from *perceived importance of brand choice*.
- H2. *Perceived sign value of the product* is a separate construct from the *perceived sign value of the brand*.
- H3. *Hedonic value of the product* is a separate construct from the *hedonic value of the brand*.
- H4. *Perceived risk of the product* is a separate construct from the *perceived risk in brand choice*.

Because Laurent and Kapferer found perceived importance and perceived risk to constitute a single factor, we propose to also test the discriminant validity of these two facets. As hypothesized by Laurent and Kapferer, these two facets have "face validity" as two constructs rather than one. It is in the nature of exploratory factor analysis that scale items measuring two correlated factors might sometimes load on a single factor (more discussion later). We shall instead be using *confirmatory* factor analytic procedures to test the following hypotheses:

- H5. *Perceived importance of the product* is a separate construct from *perceived risk from the product*.
- H6. *Perceived importance of the brand choice* is a separate construct from *perceived risk in brand choice*.
- H7. *Perceived importance of the product* is a separate construct from *perceived risk of brand choice*.

The reason for testing the last hypothesis is that Laurent and Kapferer had operationalized perceived importance at the product level but risk at brand choice level and it is

these operationalizations which in their analysis yielded a single factor.

In addition, our empirical study will also examine the relationship of the various facets with selected consumer behavior variables. Laurent and Kapferer (1985) have shown that such consumer behavior variables as 'looking at advertising' or 'the decision making process' are differentially related to their four facets. Our interest here is in testing whether the selected behaviors correlate with a facet differentially across the brand level versus the product level.

Method

We measured the "Consumer Involvement Profiles" for beer for student consumers. Beer was chosen due to its relevance to our respondents. It was also intuitively judged to provide potential for the varied occurrence of each of the facets. For example, not all consumers would see beer as providing a sign value but many would; Similarly, the pleasure of drinking beer would be realized for some consumers from any beer whatsoever, and by others only from specific brands of beer.

Of the 100 undergraduate and graduate business students who answered the questionnaire, 22 were "never" drinkers. Consistent with Laurent and Kapferer's respondent screening strategy, all reported results are based on the 78 beer drinkers. Readers may note, however, that the support to be reported for the hypotheses was not materially affected when the analyses were rerun with all 100 respondents.

Measures. Measures of each of the 4 facets operationalized differently for product and brand-choice levels are shown in Table 1. These operationalizations resulted from an extension of Laurent and Kapferer's illustrative items, and our own intuitive translation of the facets. In addition, 6 selected aspects of consumer behavior were also measured: (1) *use frequency*: I drink beer (never - 1, occasionally - 2, often - 3, regularly - 4, very frequently - 5); (2) *perceived brand differences*: Beer brands are all very similar - 1 / all very different - 7; (3) *Brand comparison*: I have done extensive (1) / I have not done any (7) brand comparisons; (4) *Brand commitment*: If your favorite brand of beer is not available in the store, you will: 1 - go to another store, 2 - buy another favorite brand, 3 - buy whatever is available; (5) *Interest in product article*: If there is an article about beer, I would be interested in reading it: Strongly disagree -1, Strongly agree - 7, and (6) *Attention to advertising*: I often pay attention to advertising: Strongly disagree - 1, Strongly agree - 7. (Brand comparison and Brand commitment scales were reverse-scored.)

Analysis

Exploratory factor analysis The elicited measures of the consumer involvement profile were subjected to an exploratory factor analytical procedure. As Bagozzi (1983) and Burnkrant and Page (1984) have pointed out, the exploratory factor analysis can mislead with respect to dimensionality. High measurement errors can inflate item correlation estimates, which in turn can lead to merging of items that measure distinct though correlated constructs (Bagozzi 1983). Therefore, the exploratory factor analysis results are presented merely as a first step. Later, we will use confirmatory factor analysis to test the hypotheses.

Table 1
Operationalization of the Four Facets of Involvement at the
Product- and Brand Choice Levels

	Factors					
	1	2	3	4	5	6
<i>A. Perceived Importance</i>						
A1. Product Level						
1. Beer is very important to me.	0.77				0.21	
7. For me, beer does not matter.	-0.85					
21. Drinking beer is important part of my life.	0.52				0.51	
A2. Brand-choice Level						
8. I choose my beer very carefully.	0.51	-0.47				
14. Which beer I drink matters to me a lot.	0.40	-0.41				0.37
16. Choosing a beer is an important decision for me.	0.49					0.53
<i>B. Perceived Risk</i>						
B1. Product Level						
23. Drinking beer could do you harm.			-0.81		0.22	
25. Nothing could go wrong by drinking beer.			0.86			-0.26
B2. Brand Choice Level						
2. When you buy a beer, it is not a big deal if you buy a wrong brand by mistake.	-0.30	0.69				
5. A bad buy of beer could bring you grief.		-0.78				
12. If my usual brand of beer was not available, making a right choice of beer would not be easy.		-0.58				0.24
20. When you buy a beer, it is hard to make a bad choice.		0.26				-0.42
<i>C. Sign Value</i>						
C1. Product Level						
13. I like the way I see myself when I am drinking beer.					0.70	
15. Drinking beer helps me express my personality.					0.76	
3. Drinking beer makes me look good to others.					0.68	-0.38
9. Drinking beer fits my style.	0.64				0.46	
18. Drinking beer is compatible with how I like to think of myself.	0.28				0.74	
C2. Brand Choice Level						
6. You can really tell about a person by the beer he or she picks.				-0.86		
10. Judging someone by the beer he/she drinks would be a mistake.				0.72		
19. You are what beer you drink.			0.21	-0.54	0.42	0.43
<i>D. Hedonic Value</i>						
D1. Product Level						
4. I can't say I particularly like beer.	-0.88					
11. Drinking beer gives me great pleasure.	0.76				0.26	
24. Drinking beer is a good way to relax.	0.25				0.47	-0.21
D2. Brand-choice Level						
17. The beer I usually drink is the most enjoyable of all.	0.47	-0.37		0.23		0.20
22. I just couldn't indulge myself as much with other beers as with the brand I drink often.		-0.64		0.40		

Note: Factor loadings of less than .20 omitted

An oblique solution is presented in Table 1. Six factors with eigenvalues exceeding 1.0 were extracted with a total explained variance of 70.1 %. The "cleanest" factors were those for sign value at product

and brand-choice levels (Factors 5 and 4, respectively), and for product risk (Factor 3). Among the other, not-so-clean factors, Factor 2 can be interpreted to represent Brand-risk. Factor 1 is a product-importance factor but it

also received significant loadings from brand- importance and brand hedonic scales. One could view it as a "general" product factor. The last factor, Factor 6, can be viewed as a "general" brand-level factor. As might be expected, there were many cross-over factor-item loadings.

Tests of the Hypotheses via Confirmatory Factor Analysis

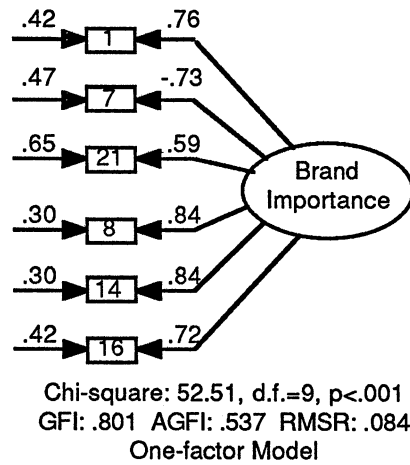
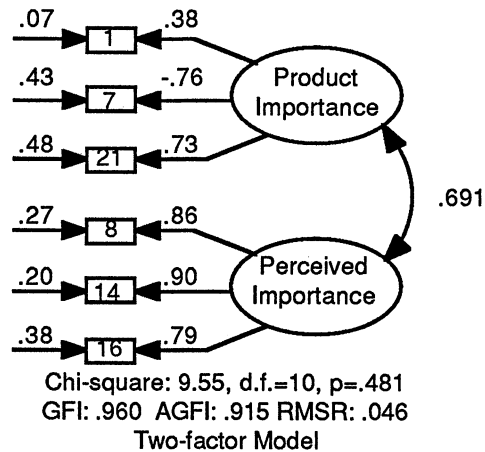
For each of the four facets, two models (A and B) are constructed. Model A treats a given facet across the two forms of involvement as one and the same construct. Model B treats that facet as two separate constructs, one for each form of involvement. See Figure 1 for the "importance" facet. Two statistics are examined. First, the chi-square values and their significances are examined for absolute fit of the model to the data. Second, improvement in chi-square value is examined across Models A and B. The difference in the chi-square values between the two models also has a chi-square distribution and it should be significant for the difference in the degrees of freedom between the two models.

Hypothesis 1. Perceived importance differs across the product and brand choice. The results of the two factor and one-factor model are presented in Figure 1. The chi-square value for the one factor model is 52.51 (degree of freedom=9, P,.001), indicating a poor fit. This statistic for the two-factor model is 9.55 (d.f.=10, p=.481), indicating a good fit. Adjusted goodness of fit index (AGFI) and Root mean square (RMS) values also indicate the the two-factor model fits much better than the one-factor model. Chi-square difference of 42.96 for a difference of 1 in degrees of freedom is highly significant at $p < .05$. Thus, Hypothesis 1 is supported. The inter-factor correlation of .691 does imply that the two constructs are well-correlated.

At this point, we must note that the two models similar to those shown in Figure 1 for the "importance" facet were also constructed for all other facets. Due to space limitations, the schematic diagrams (such as those in Figure 1) are not included here; only the chi-square fit statistics are presented below. An earlier, longer version of the paper, obtainable from authors, furnishes complete details.

Hypothesis 2. Perceived sign value differs across product and brand choice. The one factor model does not fit (chi square=63.65, d.f.=20, p=.001), and the two-factor model barely approaches significance (chi-square=32.34, d.f.21, p=.054). However, the chi-square difference of 31.31 between the two models is significant (d.f.+1, p,.05), indication the superiority of the two-factor model. The correlation between the two factors is a modest.395. Thus, Hypothesis 2 is supported.

Figure 1. Modeling Product- and Brand-Choice Importance as One versus Two Constructs



Hypothesis 3. Hedonic value differs across the product and brand choice. The one factor model is significant although not highly: chi-square=9.81, d.f.-5, p=.081 (Note: "p" values above .05 indicate significant). Two-factor models has a good absolute fit (p=.980) Also, the chi square difference is significant (difference=8.68, d.f.+1, p,.05) indicating the superiority of the two-factor model. Thus Hypothesis 3 is supported.

Hypothesis 4. Perceived risk in product is separate from Perceived risk in Brand Choice. In Table 1, under the "perceived risk" facet for the "brand-choice level" items 2 and 5 were meant to measure "risk-consequences." (Item 12 and 20 measure risk-probability, and will not be further dealt with here.) These two items with the two items (items 23 and 25) of product level perceived risk were employed in the two factor versus one factor models.

Neither model fitted the data well. (The fit was bad enough that most of the statistics could not be estimated.) The correlation matrix was examined to detect the possible causes. items 2 and 5 are correlated ($r = -.496$) and items 23 and 25 are correlated ($r = -0.504$); however, neither of the two correlations is very high. The cross factor correlations of items 2 and 5 on the one hand and, of 23 and 25 on the other are extremely low. For discriminate validity, these latter correlations must

**Table 2
Item Correlations**

	Item2	Item5	Item23	Item25
Item2	1.00			
Item5	-0.49	1.00		
Item23	-0.02	-0.06	1.00	
Item25	0.05	0.19	-0.50	1.00

be and are lower than those in the convergence triangles (see Table 2). This shows that brand-choice-risk and product-choice-risk are discriminated (Campbell and Fiske 1959). Lack of any relation whatsoever (as opposed to low correlation) might have blocked the model estimate in the LISREL Procedure. The failure to obtain very high correlations between the two-items of either factor is also a cause for concern, but, in Table 2 the separation of the two factors itself is reasonably supported. Thus, the support for Hypothesis 4 is a qualified one in the the LISREL estimation gave a poor fit, but the cross-factor item correlations were very low.

Hypotheses 5 thru 7. To conserve space, only the salient aspects of the analyses are briefly summarized below for these 3 hypotheses.

H5: *Product Importance and Product Risk*. The two-factor model fitted (chi-square 6.53, d.f.=6, p=.366) whereas the one-factor model did not (chi-square=29.11, d.f.=5, p < .0001).

H6: *Brand-choice Importance and Brand-choice Risk*. The one factor model was not significant (chi-square=16.86, d.f.=5, p=.005). Although the two-factor model also did not have a significant chi-square value (p=.027), the chi-square difference statistic showed the two-factor model to be superior to the one-factor model. However, the two factors were highly correlated (r=.883).

H7: *Product Importance and Brand Risk*. The two factor model was significant (though not highly) with chi-square value of 11.18 (d.f.=6, p=.083), while the one-factor model was *not* significant (chi-square=28.12, d.f.=5, p=.0001). The chi-square difference test showed the two-factor model to be superior to the one-factor model.

For both the product and the brand level, the other two facets, namely, "hedonic" and "sign" were proven separate constructs, and each was also proven to be separate from importance and risk constructs. That is, for each pair, a two factor rather than a one factor model was supported.

Reliabilities

The coefficient alpha of internal reliability for each facet was as follows: perceived product importance, .839; perceived brand-choice importance, .880; product level sign value, .856; brand level sign value, 0.711; product level hedonic value, .779; These are considered good reliabilities. The three remaining facets comprised of two items each correlated modestly: brand level hedonic value (items 17 and 22), .561; product risk (items 23 and 25) 0.677; and perceived brand risk (items 2 and 5), .661.

Relationship of the 8 Facets with Other Consumer Behavior Variables

Six variables related to the respondents' behaviors with respect to beer were also measured (See Method section for measures) and it was of interest to examine their correlations with each of the 8 facets of the involvement profile. Regression analyses were *not* employed for two reasons. One, significant multicollinearity among facets can render (and in our data it did) otherwise significant predictors insignificant. Secondly, because respondents have been engaging (to a greater or lesser degree) in these behaviors already, predictor/criterion distinction between these behaviors on the one hand and the facets of involvement on the other may no longer hold. Illustratively, perceived brand differences could have once led to a feeling of brand-

choice involvement; that involvement could have in turn led to paying attention to advertising, which may have fed back to an enhancement in perceived brand differences. Therefore, examining simple correlations was considered more appropriate than regression analyses.

Table 3 presents the correlations. It is immediately apparent that the brand-choice level and product level facets differ in their correlations with the 6 behavioral elements. Notable patterns are:

i) Product level risk is unrelated to any of the variables. This is because regardless of frequency of drinking, everyone seemed to at least moderately agree that drinking beer could be harmful and disagree that nothing could go wrong by drinking beer (Mean=4.80 S.D.=1.43, on a 7-point scale). We read this to mean not that people suspected harm, but rather that they could not deny the possibility of some harm.

ii) Frequency of drinking beer is related more to product level involvement than to brand level involvement. This seems reasonable.

iii) Perceived brand differences is related more to brand choice level involvement. This result seems logical.

iv) Brand commitment is related more to the brand level than to the product level of the first and fourth facets. This is logical. However, the pattern of correlations with the other two facets is not explicable.

v) Brand comparison seemed related about equally well to both levels of involvement. Although we would have expected brand level involvement to show higher influence, the equally strong influence of product level involvement is not difficult to accept (even if on a post-hoc basis).

vi) Interest in reading an article about beer was related more with product level involvement than with brand level involvement. This would be expected if an article about beer can be assumed to contain information about the product per-se than about brands.

vii) Attention to advertising was only moderately related to any of the facets, but it was related about equally well with brand level and product level involvement facets.

Summary and Discussion

Laurent and Kapferer's consumer involvement profile is seen here as an important device to map consumers' relationships with products. However, those authors did not distinguish between product-class- and brand-choice involvement. Rather inadvertently, they conceived and measured two of the four facets at product level and the other two at the brand level.

We sought to make this distinction for each of the four facets. Moreover, because Laurent and Kapferer did not present the entire scale, to expand their illustrative item list towards a full scale was also considered a benefit of this research. The items we developed had good internal reliabilities for perceived importance of brand choice, sign value of the product, sign value of the brand, and hedonic value from the product. The three other facets (perceived product risk, perceived brand risk, and hedonic value at the brand level) had modest reliabilities.

Table 3
Correlations of Selected Consumer Behavior Variables with Various Facets of the
Consumer Involvement Profile (N=78)

	Use Frequency	Perceived Brand Differences	Brand Commitment	Brand Comparison	Interest in article reading	Attention to Advertising
Product Importance	.77*	.25*	.19*	.66*	.45*	.30*
Brand Importance	.49*	.52*	.46*	.69*	.35*	.26*
Product Sign	.55*	.09	.04	.39*	.53*	.37*
Brand Sign	.34*	.23*	.01	.25*	.30*	.41*
Product Hedonic	.66*	.27*	.26*	.61*	.46*	.33*
Brand Hedonic +	.33*	.37*	.27*	.46*	.13	.14
Product Risk	.09	-.03	.04	.14	-.02	.01
Brand Risk	.22*	.52*	.34*	.37*	.06	.03

* $p < .05$

+ Measured by item 17.

While the exploratory factor analysis provided unclear factor solutions (which may be expected), the more elegant confirmatory factor procedures confirmed the separation of each facet at the product- and brand-choice levels. For perceived importance, and likewise for sign value, the support was unequivocal for the two-factor rather than one-factor model (brand-choice level and product-level involvements being modeled respectively as two constructs or as a single construct). Similar was the case for the hedonic aspect. For perceived risk, the support for the hypothesized two factor model was a qualified one. The one-factor and two-factor models were comparable (i.e., neither was superior to the other), but the cross-factor item correlations supported the discrimination between the two factors. The less than desired levels of model fit may have been due to: (a) less than perfect measures for risk at both the levels; (b) the product beer not perhaps being seen as risky, and (c) possible vagueness about the meaning of product risk. Nonetheless, there was support for each facet being different across the product- and brand-choice levels.

Some consumer behaviors were about equally related to a given facet at either level of involvement, while some other facets were differentially related. For example, perceived brand differences and brand commitment were related more with brand-level than with product-level involvement. And, interest in reading about the product was related more with product level than with brand level involvement. These results are logical, and they would have remained undiscovered if the facets of the profile were not separately measured at brand-choice and product levels.

Our results are obviously limited by the use of only a single product and convenience sampling and also due to the smallness of the sample size. In addition to overcoming these tactical limitations, an important task for future research is the further theoretical and empirical explication of each facet. The distinction between the brand level and product level involvement is intuitively apparent for three of the four facets, namely, perceived importance, perceived risk, and sign value. For example, all *essential* items (e.g., salt, facial tissue) could be important at the product level but not necessarily at the brand level. Also, some not-so-essential products such as airline travel could be important at the product level but not at the brand choice level. Then, some products

could be risky at the product level (e.g., some medical procedures) but not any more risky at the brand-level (choice of surgeon). And for many established products (e.g., appliances) brand-choice is risky but products themselves are not perceived to be risky. Finally, sign value can be associated with the product itself rather than with the brand when the product is new, or a luxury or both (e.g., cellular phone, video cameras, or diamonds).

The case of the hedonic facet is less clear. If one finds a brand hedonic, the product would seem to become hedonic inevitably. If the product is hedonic, repeated use may result into the preferred or usual brand being perceived as more hedonic than other brands. The two concepts may be difficult to separate empirically, or the relationship may be asymmetrical. The relationships among all facets (within and across product/brand-choice levels), and of each facet with other consumer behavior variables definitely need more a priori hypothesis development and empirical testing. The present research is a step in that direction.

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Applications and Extensions of Categorization Research in Consumer Behavior

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Abstract

A special topic session was organized to explore recent applications and extensions of categorization research in consumer behavior. The purpose of this paper is to summarize the session by: 1) providing a brief overview of categorization theory and consumer researchers' recent contributions to this topic, 2) abstracting the four papers presented, and 3) highlighting comments made by the discussants that integrated the papers and suggested directions for future research.

Overview

The basic premise underlying categorization theory is that people naturally divide the world of objects around them into categories in order to achieve efficient understanding and processing of their environment (Rosch 1975; Rosch and Mervis 1975; Rosch et al. 1976). Categorization allows people to react to new stimuli as members of previously defined categories stored in memory rather than having to formulate unique responses when new stimuli are encountered.

Categorization theory is particularly relevant to understanding consumer behavior because consumers face a complex choice environment replete with brands having both shared and unique features. Consumers may use categorization to simplify and structure their environment. For example, they may group brands of, say, cars by categories such as sports cars, family cars and sub-compacts. This allows reactions to a new brand/car to be based, at least in part, on the category in which it is classified.

This simple observation about how people structure their environment has increasingly and profitably been applied to extend understanding of how consumers perceive and react to marketing stimuli. For example, the notion that consumers can transfer affect from the general product category to a specific exemplar or brand has been employed to explain consumers' use of evaluation strategies that are not based on analytic information integration approaches (e.g., Cohen 1983; Suján 1985). The idea that information about product categories is likely to be organized hierarchically into broad product class categories, below which are nested more specific or "basic" product type categories, with brand level categories serving as the most specific level of categorization has been used to explicate market structure issues (e.g., Day, Shocker and Srivastava 1979), to understand product evaluations (Meyers—Levy and Tybout 1987), and to determine contingencies under which comparative advertising will differ from noncomparative advertising (Suján and Dekleva 1987). More recently, exploration of categories idiosyncratic to the marketing domain has begun. For example, some research has examined the categories or "schemas" consumers have about advertising (Wright 1986). Other research has examined categories of noncomparable products (e.g., vacations and home improvement expenditures) that consumers often must choose from (Johnson 1984; Bettman and Suján 1987). Finally,

consumer researchers have explored how differences in consumer expertise with a product category affects categorization and judgment processes (Alba and Hutchinson 1987; Suján 1985). Thus, significant extensions of the current theorizing in psychology are being made by consumer researchers. Many of these insights are a result of consumer researchers' focus on complex "real world" stimuli and their interest in differences in the ability and motivation to process product information among groups of consumers.

The four papers presented in this special topic session add to the growing body of consumer research examining categorization issues. The first paper addresses the issue of *how* consumers categorize. Specifically, it reports research examining two alternative processes that have received much attention in the literature: analytic versus holistic, and provides insight about how expertise/training influences which of these processes is employed. The second paper also examines the categorization process but takes a developmental perspective. The process by which children of varying ages categorize products is examined and it is observed that young children operate in a manner conceptually equivalent to inexperienced or "novice" consumers for a product category. The third paper discusses mood as an antecedent to categorization and provides evidence that individuals in a positive mood show greater flexibility, adaption, and creativity in their categorization strategies than do individuals in a neutral mood. The final paper explores the effect that categorization may have on product evaluations and judgments and reports evidence suggesting that products that are moderately incongruent with their claimed category receive more favorable evaluation than either congruent or extremely incongruent products. Thus, the four papers together examine the various stages in the categorization process: the antecedent to categorization, the process of categorization itself and some important consequences of categorization for judgment. What follows are more detailed abstracts of each paper that were provided by the paper authors.

Abstracts

Ignoring Irrelevant Information: The Roles of Visual Similarity and Consumer Expertise

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Joseph W. Alba, University of Florida

When a new product category emerges or an old one is sampled for the first time, consumers must determine its structure and learn how to discriminate between subclasses within it. Even when a product category is very familiar, a new entrant will prompt classification behavior. Once classified, decision making is simplified. In some cases, however, producers complicate the categorization process by intentionally imitating competing brands, particularly on perceptual dimensions.

Alba and Hutchinson (1987) suggest that expert consumers will be more likely than novices to discriminate between artificially similar products due to experts' greater propensity to engage in analytic rather

than holistic processing. In the context of categorization, analytic behavior refers to the ability to ignore irrelevant information and classify products solely on the basis of features that are diagnostic of category membership. It should be noted that expertise is conceptually distinct from product familiarity, which is defined in terms of the number of product related experiences. That is, the ability to be analytic develops as a function of the qualitative nature of one's experiences.

The hypothesized relationship between expertise and categorization was explored experimentally by providing subjects with several types of experience and observing the effects of experience on subsequent categorization performance. Specifically, during an initial training phase, 180 subjects were shown ten pairs of drawing of fictitious stereo speakers. The speakers in each pair always differed with respect to two category assignments (i.e., high priced vs. low priced and Brand A vs. Brand B). These category assignments were designated by arbitrary cues beneath each picture. The speakers were completely described by five visual dimensions: shape (trapezoidal vs. rectangular), size (tall vs. short), speaker location (top vs. front), speaker cover (solid vs. mesh) and pedestal size (full vs. recessed). However, the categorization rule was defined in terms of only one of these features (e.g., tall = high priced; short = low priced). The remaining attributes were predictive of category membership, but not perfectly. That is, they correctly predicted category membership 70% of the time. Thus, for these training stimuli the criterial and irrelevant attributes generally agreed in their prediction about category membership. In the subsequent test phase, test pairs were constructed such that the criterial attribute indicated one category but, based on correlational information in the training experience, the remaining attributes indicated the alternate category. The primary dependent measure was the percentage of test pairs properly categorized. Good performance would indicate use of the correct analytic rule. Poor performance would indicate use of irrelevant information -- either an incorrect rule or a holistic strategy wherein categorization is based on the overall similarity of the test stimulus to the training stimuli from that category.

The critical manipulations involved the type of experience given to subjects during the training phase. Several factors were varied orthogonally. First, the difficulty of learning the criterial attribute was varied by having the two speakers in each training pair differ along all five dimensions (Hard condition) or on only two dimensions (Easy condition). Second, some subjects were explicitly instructed to learn the rule for discriminating between the two categories of speakers. For half of these subjects, the categories that were learned during training were the same as those that were subsequently tested (Intentional condition); for the other half, training and test categories were different (Incidental condition). The remainder of the subjects were told to examine the speakers and indicate which one was more visually appealing (Preference condition). Finally, the criterion feature itself was varied systematically across subjects. Five features were used, and the feature that defined category membership ranged from very salient (i.e., shape) to very subtle (i.e., pedestal size).

The results showed that, as expected, subjects in the Easy learning condition were significantly more analytic than those in the Hard condition. Also, the

level of analytic behavior varied as a function of the criterial attribute. Shape was the easiest to learn, pedestal size was the most difficult, and the remainder did not differ from each other. Surprisingly, however, there was no effect of intentionality. This outcome was hypothesized to be due to the level of attention paid to the two categories by subjects in the Incidental and Preference conditions and to the perceptual salience of the attributes. Thus, a follow-up experiment was run that omitted all reference to price or brand in the training instructions to the Preference group. The results of this study supported the interpretation of the initial experimental results. Subjects in the Intentional condition were significantly more analytic than those in the Preference condition.

Subjects were also asked to rate their confidence in each of their categorization responses. Analysis of these responses revealed an interesting effect. First, subjects who used a holistic strategy became more confident of their (incorrect) responses as the stimulus became more visually similar to the prototype of the incorrect category. Moreover, subjects who learned the criterial attribute and performed perfectly in the test phase nonetheless became less confident of their responses as the test stimuli became less similar to the correct prototype. Thus, even when attributes can be ignored for purposes of categorization, irrelevant information can have a residual effect on one's beliefs. This suggests that even experts may be influenced by such information in some situations. Such an effect might be expected under adverse processing conditions such as when time pressure or information load are high or involvement is low.

Age Difference in Product Categorization

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To date, categorization research has focused primarily on examining the processes employed by adults. However, considerable insight into adult processing can be gained by taking a developmental perspective and examining how children of different ages categorize products. In addition to advancing understanding of categorization in general, exploring children's processing has the benefit of enhancing understanding of a segment of consumers that is important to many marketers.

A starting point for developing hypotheses about children's categorization processes is the literature on differences between expert and novice adults. Research suggests that novices tend to use "surface structure" attributes (attributes that are readily observable) to categorize, whereas experts use "underlying attributes" (attributes related to the functional meaning of the category) to categorize. Further, it is argued that even if these underlying attributes are known to novices, and therefore are *available* for making decision, these attributes are not readily *accessible*. Therefore, it is possible that novices can be made to behave more like experts by priming or cuing these underlying attributes.

Drawing a parallel between expertise-related differences and age-related differences, two hypotheses are proposed. First, it is anticipated that even after controlling for product experience, younger children will be more dominated by visual salience (e.g., package, color) in categorizing products than will older children, whereas older children will be more likely to use underlying product characteristics (e.g., taste) in categorizing products than will younger children.

Second, it is expected that "cued" rather than "free" categorization tasks (e.g., asking children to categorize based on choice preferences rather than to merely group products without specifying a "criterion" for categorization) will eliminate some of the observed age differences (see John 1981 for a review of the literature that provides further support for these hypotheses).

To test the hypotheses, a study was conducted with approximately 120 children ranging in age from 4 to 10 years. Children were divided into three groups based on age: below 6, 6-8, and 9 and over. Two product categories were selected for study: beverages and cereals. Brands familiar to *all* age groups were used. Children were presented with three brands from a product category at a time (e.g., Cheerios, Apple Jacks and Apple Squares). The brands were clearly identified by the experimenter and familiarity with the brands ascertained. Subjects were asked to group two of the three brands together and separate from the third and to verbalize their basis for doing so. Subjects sorted several triads and either no basis for categorization was specified (free sort) or a variety of cued bases for categorization were provided.

The results supported the hypotheses. As predicted by the first hypothesis, in the free categorization task, the use of taste (an underlying feature) as a basis for sort increased with age. Also, in the free categorization task, both the youngest and middle age groups were more likely to use visual product and package attributes to sort compared to the oldest age group. In the cued categorization task, however, there was some indication that the middle age group behaved more like the oldest age group in their use of underlying and visual product attributes. Thus, support for the second hypothesis suggests that providing bases for categorization can alleviate some age differences. These results have implications for both categorization theory (especially for expert-novices differences in categorization), and public policy.

Mood Effects on Categorization Tasks: A Cognitive Flexibility Hypothesis

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Recent research has demonstrated that mood can affect categorization. Isen and Daubman (1984) found that subjects in a positive mood tended to create and to use categories more inclusively than did subjects in a neutral mood condition. Isen hypothesizes that positive mood causes subjects to see more interconnections between items and therefore to categorize at a superordinate level. Although Isen does not commit herself to an explanation for why subjects in positive moods see more interconnections, one possibility that she offers is that people tend to learn information in a positive mood and therefore reinstating a positive mood makes these interconnections more available.

An alternative explanation of the effect of mood on categorization can be developed by examining parallels between the effects of positive mood and the effects of expertise on processing. Both factors appear to increase cognitive flexibility or creativity in approaching tasks (Showers and Cantor 1985). Thus, positive mood subjects, like experts may be more *adept* at using their knowledge structures. This could explain why positive mood subjects can categorize at

superordinate levels if the task requires them to do so (as it did in Isen's study) and it leads to the additional inference that positive mood subjects also should be able to categorize at *subordinate levels* if the task can best be performed at more specific levels.

Two studies were conducted to test this cognitive flexibility hypothesis. The first varied Mood and Processing Goal and observed the effects on categorization. Positive mood subjects adapted their categorization scheme to the processing goal to a greater extent than other subjects thereby providing evidence for their cognitive flexibility. Specifically, contingent upon task demands, positive mood subjects were both *more* inclusive and *less* inclusive than other subjects.

A second study pursued the cognitive flexibility hypothesis by examining subjects' bases for categorization. Positive mood subjects were found to employ *creative* and *non-obvious* ways to categorize at both the superordinate level, where they found non-obvious or novel interconnections between items, and at subordinate levels, where they developed novel distinctions between items. Implications of these findings for consumer choice and evaluation strategies were discussed.

What Is It? and What of It?: The Role of Categorization in Judgment

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Alice M. Tybout, Northwestern University

Mandler (1982) suggests that categorization processes may have consequences for judgment. More specifically, he hypothesizes that the match or congruity between a category activated in memory and a new object determines the extent and direction of the processor's elaboration. This cognitive elaboration, in turn, influences judgments such that moderate incongruity leads to more favorable evaluation than either complete congruity or extreme incongruity.

Moderate incongruity is argued to lead to more favorable evaluation than congruity because encountering an object/product that is unexpected and puzzling over it is thought to be inherently satisfying, provided that the incongruity can somehow be accommodated within the existing cognitive structure. Moderate incongruity also is expected to lead to more favorable evaluation than extreme incongruity because the thought stimulated by extreme incongruity often fails to result in a satisfactory resolution.

Mandler's hypothesis regarding the relationship between level of congruity and evaluation and the role that cognitive elaboration plays in this relationship were examined experimentally. In this research, Rosch's notions of hierarchical category structure were used to operationalize levels of congruity (Rosch 1975; Rosch and Mervis 1975). Congruity was assumed to occur when a new product conformed to the attributes associated with an activated product category. Moderate incongruity was operationalized by a new product that possessed attributes that not completely matching those associated with the activated product category, but the incongruity could be resolved by moving to the next lower level in the product hierarchy. Finally, extreme incongruity was argued to occur when the attributes of a new product neither matched those associated with an activated product category, nor did they match those associated with categories at the next lower level in the product hierarchy.

The design included eight treatments that were analyzed as three overlapping 2 x 2 factorial designs. The results of Design One supported the hypothesis that moderate incongruity leads to more favorable evaluation than either congruity or extreme incongruity. These findings replicated previous studies (Meyers—Levy and Tybout 1987; Lehtisalo 1985) and demonstrated the robustness of the phenomenon by employing a new product category.

The results of Design Two provided some evidence for the role that cognitive elaboration plays in the relationship between level of congruity and evaluation. Specifically, the effects observed in Design One were only obtained when comparative cognitive elaboration was encouraged. No effect of the level of congruity on evaluation was observed when subjects were instructed to evaluate a product without reference to category knowledge stored in memory.

Design Three demonstrated that the advantage of moderate incongruity could be reinstated by using a cue other than instruction set to stimulate comparative processing. Specifically, when the manufacturer was incongruent with the product category, moderate incongruity was once again observed to lead to more favorable evaluation than congruity.

On the basis of this research, it was argued that Mandler's hypothesis may help to explain how consumers form judgments. However, it is important to note that Mandler's theorizing only pertains to the affect stimulated by the *process* of responding to different levels of match/mismatch between a category and a new object. It is likely that in some consumer judgments this affect will be overwhelmed by the affect associated with the category or with the attributes of the object.

Discussants' Comments

Following the presentations, two discussants, John Carroll of M.I.T. and Ann Beattie of New York University, offered their perspectives on the topic of categorization in general and the papers presented in particular. Their insights are briefly summarized below.

John Carroll observed that the theme of individual differences, particularly differences in expertise, ran through many of the papers presented. Hutchinson and Alba explicitly examined this variable through varying subjects' training experience, John used children of different ages to represent degrees of expertise and Murray et al. drew an analogy between mood and expertise. (Although the observation was not made, even the Peracchio and Tybout paper might be argued to be related implicitly to expertise because experts and novices may have different thresholds for recognizing incongruity as a function of the development of their existing knowledge structure.) Carroll encouraged consumer researchers to pursue this line of research with an emphasis on the learning process itself (e.g. How do people learn?).

In conducting further research, he cautioned that it would be important to recognize that no one style of processing would be optimal for all situations. Although Hutchinson and Alba provide evidence that holistic processing is less effective than analytic processing in detecting the difference between similar products, holistic processing is not an inherently inferior strategy; it can be quite sophisticated and, in some situations, a superior approach. The overriding criterion for success is adapting one's strategy to the task demands, as the Murray et al. paper suggested.

Carroll encouraged John's strategy of using children as one means of understanding the learning process. He noted that when using children as subjects, the dependent measures must control for age differences in children's abilities to verbalize the strategies they employ. For this reason, he suggested that it may be necessary to rely more on nonverbal or behavioral bases rather than verbal self-reports as a basis for inferring the categorization strategies used by children. John's strategy of obtaining both verbal and behavior measures allows assessing the extent to which the age differences in verbalization confound interpretation.

Carroll expressed interest in mood effects on categorization and suggested that one direction for future research in this area would be to explore more extreme levels of mood. He speculated that the relationship between favorableness of the mood and cognitive flexibility in categorization might be nonmonotonic rather than linear, at extreme levels positive mood might interfere with categorization. He also wondered whether children of different ages might spontaneously experience different moods when aware they were participating in an experiment.

Finally, Carroll suggested that, in contrast to the problems with verbalizations when studying children, verbal reports such as cognitive response measures might provide additional insight into the process hypothesized to underlie the findings reported by Peracchio and Tybout. He also noted that, when examining questions about how people learn, it would be especially worthwhile to explore the Rosch-type hierarchical structures used by Peracchio and Tybout with particular attention to how consumers form basic level categories and how these differ across segments.

Ann Beattie structured her remarks around three aspects of categorization; the formation of categories, the process of categorizing, and the effect of categorization. Echoing Carroll's call for further research examining the process by which categories are formed, Beattie argued that a better understanding of how people come to appreciate covariation between attributes or features is needed. Hutchinson and Alba's work, which included a manipulation of the ease of detecting covariation, was viewed as an appropriate step in this direction. It also was suggested that future research pursue the ways in which experience and knowledge affect the formation of categories.

In discussing ongoing categorization tasks, Beattie noted that a better understanding of how context affects categorization processes is needed. She observed that all of the papers in the session made some contribution to this important topic by examining contextual factors such as processing goals and ease of categorization, and she encouraged consumer researchers continue their focus on such variables.

Beattie indicated that further work examining the effect of categorization on evaluation also would be desirable. She suggested that it would be worthwhile to examine how various levels of abstraction in categorization (i.e. levels in a category hierarchy) influence evaluation. She also observed that the role of novelty in stimulating elaboration and thereby influencing evaluation, as proposed by Peracchio and Tybout paper, is an interesting avenue for future research.

Finally, Beattie noted that the papers in the session explored a number of individual differences (e.g. expertise, age, mood). She observed that such a focus on individual differences can help achieve general

understanding of categorization processes and attention would continue to be directed to such variables.

In their summary remarks, both discussants, who are psychologists by training, observed that consumer researchers are not simply borrowing categorization theory developed in psychology and applying it in consumption situations. Instead Carroll and Beattie contended that consumer researchers were giving back to psychology theoretical contributions to understanding categorization processes. Moreover, the rapid evolution of categories in areas such as high tech products may uniquely position consumer researchers to provide further advances in the field of categorization.

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The Generality of Typicality Effects on Preference and Comparison: An Exploratory Test

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Abstract

Consumer researchers have become interested in understanding typicality effects in product categories. But little research has explored factors that mediate the nature or existence of such effects. This paper focuses on two phenomena--the positive relationship between typicality and preference and the tendency to use more typical category members as referents in comparisons--and explores the circumstances under which they might hold or not hold in product categories. Data from laboratory studies show that the relationships of interest may break down or reverse in product categories for which prestige, exclusiveness, or novelty are important purchase goals.

Introduction

Consumer researchers have recently become interested in better understanding product categorization processes (Alba and Hutchinson, 1987). In particular, research has focused on understanding the determinants and consequences of differences in product "typicality" (Nedungadi and Hutchinson, 1985; Ward and Loken, 1986; Loken and Ward, 1987). This interest has been prompted by research which shows that the typicality of a category member is associated with a number of effects that are relevant to understanding consumer behavior. In particular, research shows (Mervis and Rosch, 1981) that more typical members of a category tend to be:

- named first in free recall of category instances;
- learned faster, classified more quickly, and classified more accurately;
- used as cognitive reference points in comparisons;
- perceived to possess greater amounts of valued attributes.

Studies of typicality effects in the consumer behavior literature have focused on demonstrating their existence in categories of products. Several studies have found positive relationships between typicality, recall, and preference across a variety of product categories (Nedungadi and Hutchinson, 1985; Loken and Ward, 1987). Research is now needed on the generality of these effects. In other words, what are the circumstances under which typicality effects might hold, not hold, or perhaps reverse in product categories?

This paper focuses on two phenomena--the positive relationship between typicality and preference and the tendency to use more typical category members as referents in comparisons--and discusses the types of product categories in which these effects should hold or break down. Both effects suggest that greater typicality confers an advantage to products when they are compared to others. In particular, they imply that typical products will tend to be better liked than less typical products and will tend to be used as "standards of comparison" in judgements.

The paper will discuss possible reasons for a positive relationship between typicality and preference, discuss some circumstances under which this relationship should break down or become negative, and test a set of two hypotheses resulting from these considerations.

Typicality and Preference

Studies in the marketing and psychology literature have demonstrated positive relationships between typicality and preference in a variety of product categories. Nedungadi and Hutchinson (1985) found a positive relationship between typicality and preference in four product categories--news magazines, business magazines, soft drinks, and beer. Loken and Ward (1987) also found a positive relationship between the typicality of shampoo brands, attitude toward the brands, and a measure of the degree to which the brands possessed attributes salient for purchasing category members. In the psychology literature, Barsalou (1985) found a positive relationship between the typicality of category members and the degree to which they possess "ideal" attributes in nine goal-derived categories (e.g., clothes to wear in the snow) and nine common taxonomic categories (e.g., vegetables, fruits, birds).

Explanations for a Positive Relationship Between Typicality and Preference

The studies reviewed above raise two questions: Why are more typical products and services more preferred? Under what circumstances might this relationship break down or become negative? Several lines of research are relevant to these issues. The discussion below will focus on the first issue; a later section will focus on the second.

Natural Selection

In categories of relatively inexpensive, widely affordable products, brands or types with preferred characteristics may become more typical by a process of natural selection. For example, a new entrant to a category might have preferable but atypical characteristics. As the entrant gains share, other brands will attempt to imitate its characteristics. Finally, the preferred entrant will become more typical of the category because it will share attributes with its imitators and will be more frequently encountered as an instance of its category. An exception to this process might be products that are initially preferred because of their prestige, exclusiveness, or novelty. As such products become more widely available and imitated, preference for them may tend to decline instead of rise (Snyder and Fromkin, 1979).

Goal-Oriented Categorization

Barsalou's work suggests that in goal-derived categories, a positive relationship should exist between typicality and preference. Barsalou (1985) shows that when people think of goal-derived categories they tend to judge exemplars that are more relevant to goal achievement as most typical of the category. Thus, if widely shared goals for buying a shampoo are cleaning and conditioning hair, shampoos that are perceived to

perform well on these dimensions should not only be favorably evaluated but also perceived as typical. However, in product categories where prestige, exclusiveness, or novelty is a goal, the relationship between typicality and preference may not hold. This possibility will be discussed in a later section.

Familiarity

Zajonc (1968) and later researchers have demonstrated that greater familiarity with a stimulus leads to greater liking for the stimulus. This relationship could provide a partial explanation for the relationship between typicality and liking, but studies of the relationship between familiarity and typicality have produced conflicting results. Some studies have found a positive relationship between typicality and various measures of familiarity or frequency of encounter (Barsalou, 1985; Hampton and Gardiner, 1983; Malt and Smith, 1982; Ashcraft, 1978) and others have not (Rosch, Simpson, and Miller, 1976; Mervis, Catlin, and Rosch, 1976). Thus, it is unlikely that the influence of familiarity accounts completely for the typicality-preference relationship.

The reasons cited above for a positive relationship between typicality and preference suggest the following hypothesis:

- H₁: In categories of products for which prestige, exclusiveness, or distinctiveness are not important purchase goals, the relationship between prototypicality and preference should be positive.

This hypothesis is supported by past research findings (Nedungadi and Hutchinson, 1985; Ward and Loken, 1986; Loken and Ward, 1987) and thus is of interest principally in contrast to the next hypothesis to be presented.

Reasons Why Typicality and Preference Should Not Be Related

Despite previous findings of a positive relationship between typicality and preference, at least three related perspectives suggest that typical products should sometimes be less preferred. These include literature on the value of scarcity, variety-seeking behavior, and attitude theory.

The Value of Uniqueness

Consumers may value uniqueness itself, especially in more expensive, higher involvement products that are perceived as means of self-expression such as clothing and automobiles. Snyder and Fromkin's (1979) uniqueness theory asserts that people have a basic need to feel moderately dissimilar to others. Because of this need, people value rare and unusual products, ideas, and experiences. For example, a collector of jazz records may value an old, scratched recording of a forgotten artist because it is the only known copy, not because it is better or even more valuable than others. Uniqueness theory suggests that when consumers buy products important to their self-concept, they may value atypicality per se.

Variety Seeking/Innovativeness

Variety seeking theory also predicts that people will sometimes prefer the atypical to the typical.

Researchers (McAlister and Pessemier, 1982; Raju, 1980) have proposed that consumers have a basic motivation to seek variety in their experiences. McAlister and Pessemier (1982) note that such arguments are based on Driver and Streufert's (1964) optimal stimulation level theory. According to this theory, as stimulation falls below an optimal level, people will seek out new, unusual, and exciting products, services, and experiences. But if the stimulation generated by these or other events is too high, people will seek less stimulation. For example, Raju (1980) found positive correlations between consumers' optimal stimulation level and their desire for unusual products and services.

Like variety seeking theory, the literature on innovativeness also predicts that certain consumers will prefer atypical products over currently accepted more typical products. For example, in his dissertation Szybillo (1973) demonstrated that fashion opinion leaders as compared to non-opinion leaders preferred pants suits perceived to be "scarce" over the same suits perceived to be "plentiful."

Attitude Theory

Fishbein and Ajzen's (1975) expectancy-value model of attitude theory does not by itself predict that consumers will prefer atypical products. But this prediction emerges if the theory is combined with insight into the structure of consumer product categories. The expectancy-value model of attitude formation suggests that consumers will have a better attitude (A object) toward products they perceive as more likely to have valued attributes. If a strong positive relationship between price and quality exists in a product category, and if better quality products tend to have smaller market shares because of their expense, then products that consumers perceive to have valued attributes may tend to be perceived as atypical of the product category.

The theoretical perspectives reviewed above suggest the following hypothesis:

- H₂: In categories of products for which prestige, exclusiveness, or distinctiveness are important purchase goals, the relationship between prototypicality and preference should be negative instead of positive.

Another possibility should be mentioned. If the category includes products that are atypical but negatively evaluated, typical and more positively evaluated, and atypical but very positively evaluated, a curvilinear instead of negative relationship between typicality and preference should hold.

Typicality and Referential Judgements

Another cognitive advantage of typical members of a category is their tendency to be used as reference points that less typical members are compared to. For example, people tend to describe less typical members of a category as "sort of," "essentially" or "almost" typical members (Rosch, 1975). This phenomena is interesting from a consumer behavior perspective because it suggests that consumers will tend to use more typical members of a category as standards of comparison for less typical members.

Rosch's (1975) study is the most widely cited support for the tendency to use more typical category members as reference points. Rosch found that people

tend to use more prototypical colors as reference points for the classification of less prototypical colors. In one experiment, the participants were presented with sentence frames such as "_____ is almost _____." Above each frame the participants saw two numbered color chips from a single color category. One chip was a variant of the color (e.g., a purple red) and the other was a color that was pretested to be prototypical of the category. The participants were instructed to fill-in the sentence frames with the numbers for each color chip in the most appropriate order. The results showed that participants had a strong tendency to compare less prototypical category members to more prototypical category members.

This study raises two issues for consumer researchers. The first is whether the tendency to use more prototypical category members as reference points generalizes to product categories. In categories of products for which prestige, exclusiveness, or novelty are not purchase goals, consumers might tend to use typical products as referents for reasons suggested by Rosch (1975). In such categories typical members share more attributes than other members, are closer to the central tendency of their category, and are therefore more useful than atypical instances in classifying stimuli as members or non-members of the category. Typical members might also be used as reference points because they are preferred over atypical members.

The above considerations suggest hypothesis 3:

- H3: Participants will use more typical instead of less typical products as referents in linguistic hedges constructed about a category of products for which prestige, exclusiveness, or novelty is not an important purchase goal.

The second issue is whether the tendency to use typical category members as reference points generalizes to categories of more expensive, higher involvement products. In such product categories, marketers and consumers often speak of the most prestigious products as "standards of comparison" or "standards of excellence." These products may be used as referents because they offer the best performance on desired attributes and therefore form endpoints useful for judging other products. Referent products in more expensive, high involvement categories are usually not the most typical because they tend to have more or different attributes than other brands, tend to rate better on shared attributes, and tend to be less frequently encountered. These considerations lead to hypothesis 4:

- H4: Participants will use less typical instead of more typical products as referents in linguistic hedges constructed about a category of products for which prestige, exclusiveness, or novelty is a purchase goal.

Experimental studies, reported next, were conducted to test hypotheses one through four. These studies were designed to demonstrate the existence of the predicted exceptions to typicality-preference relationships but not to differentiate between different explanations for their existence or to estimate their generality across product categories.

Methodology

Overview

Three laboratory studies were designed to address the above hypotheses. In study 1, prototypicality ratings were collected from 21 participants for brands of new automobiles, clothing stores, and brands of cola. In study 2, 29 participants provided ratings of their global attitudes toward the same set of stimuli. The attitude and prototypicality ratings were collected between groups, instead of within subjects, to reduce the possibility that subjects would guess the study's hypothesis and to increase the comparability of the findings with previous studies of typicality relationships. In study 3, 24 participants filled-in hedged sentences (e.g., "A _____ is almost a _____") with names of items from the categories noted earlier.

Participants

The participants were undergraduate students in marketing classes at a sunbelt university. They took part in the experiment during class time but did not receive course credit for their participation.

Selection of Stimuli

The product categories selected for the experiment were colas, new automobiles, and stores that people from the metropolitan area could buy clothes at. The categories were selected by several criteria. One goal was to choose categories that students would have some knowledge of. Judgement suggested that most students at the university would have some knowledge of colas, automobiles, and clothing stores. Another goal was to select categories that varied in the extent that prestige, exclusiveness, or distinctiveness were purchase goals for college students. The cola category was chosen intuitively to represent a category of inexpensive, relatively low involvement products which consumers do not particularly value for their exclusivity. The categories of new automobiles and clothing stores were chosen intuitively to represent categories in which the prestige, exclusiveness, or distinctiveness of the brand or store are important goals for evaluation, purchase, or patronage. Prior studies support these judgements. For example, in a survey of the residents of a southern metropolitan area, King and King (1980) found that almost 80 percent of respondents under 30 perceived the automobile as a status symbol to all U.S. socioeconomic classes. Studies also suggest that status or class image have a significant influence on consumers' image of stores that sell clothing (Lindquist, 1975; Jacoby and Mazursky, 1984). To further assess students' perceptions of these product categories, three groups of ten students in a marketing class were asked to list either reasons for purchasing or not purchasing automobiles, reasons for purchasing or not purchasing colas, or reasons for patronizing or not patronizing clothing stores. The lists revealed that a majority of ten participants listed prestige, status, or image as reasons for buying automobiles and a majority of ten participants noted status, upscale merchandising, or quality of clothing as reasons for patronizing a clothing store. Participants did not note prestige, upscale image, or premium quality as reasons for buying colas.

As an aid to selection of the specific items presented within each category, a pre-test sample of students was asked to list members of the various

categories. The stimuli (see Table 1) were chosen from the items they listed with the objectives of choosing items that would be recognizable, would vary in typicality, and in the case of the new automobile and store categories, would vary in prestige, exclusiveness, and distinctiveness.

Prototypicality Ratings

In study 1, 21 participants rated the prototypicality of brands of automobiles, stores that people in the metropolitan area could buy clothes at, and brands of cola. The instructions and measure used were adapted from Rosch and Mervis (1975). Specifically, the participants rated the prototypicality of each category member on a 0-10 point scale with endpoints of extremely poor example (0) and extremely good example (10).

To reduce any tendency of the participants to provide attitude instead of typicality ratings on the "extremely good"—"extremely poor" scales, the experimenter noted that a good example meant a more typical example, not a more preferred or favorite example, and that a poor example meant a less typical example, not a less preferred or least favorite example. The experimenter also noted that a more typical example does not necessarily occur more frequently and a less typical example does not necessarily occur less frequently. To help compensate for possible differences in the participants' knowledge about automobiles, small (1" by 2") black and white pictures of each automobile were reproduced above its name and the rating scale.

Participants saw only the names of the stores and colas since pretest data indicated that almost all students were knowledgeable about these categories.

Automobiles were rated first, followed by stores and then colas. The instructions were briefly repeated before participants rated the latter two categories. Within each category, the category members were presented in a random order and its reverse with the two orders counter-balanced across participants.

Attitude Ratings

In study 2, 29 participants were asked to rate their attitudes toward the previously specified sets of automobile brands, stores that people in the metropolitan area could buy clothes at, and cola brands. The instructions asked participants to "rate your attitude toward each (category member) on the three scales that appear below its name." The measures were three 0-10 point evaluative scales with endpoints high-low quality, good-bad, and satisfactory-unsatisfactory. The participants saw black and white pictures of the automobiles reproduced on the questionnaire (the same pictures used in study 1) but no pictures of the other stimuli.

As before, the categories were presented in the same order (automobiles, stores, and colas) to ensure that the instructions could be briefly repeated before each category. Within each category, the stimuli were presented in a random order and its reverse, counterbalanced across participants.

Table 1
Prototypicality and Attitude Scores by Category

Automobiles	Prototypi- cality Attitude		Clothing Stores	Prototypi- cality Attitude		Colas	Prototypi- cality Attitude	
Oldsmobile Cutlass	8.9	14.9	Dillard's	8.5	16.3	Pepsi	9.3	15.9
Buick Skyhawk	8.7	15.6	Broadway Southwest	8.3	15.9	Coca Cola		
						Classic	8.9	17.6
Chevrolet Cavalier	8.4	14.1	The Gap	7.6	13.9	Diet Coke	8.2	16.0
Dodge Aries Sedan	8.3	11.7	Sears	7.6	11.1	Diet Pepsi	7.9	15.2
Nissan Sentra	8.2	14.4	Goldwater's	7.5	16.1	RC Cola	7.6	13.0
Chevy Nova	8.2	12.1	J. C. Penney	7.2	11.5	"New" Coke	7.2	12.9
Honda Accord Sedan	8.1	16.5	Miller's Outpost	6.9	13.3	Shasta Cola	7.2	11.5
Oldsmobile 98	7.9	15.9	Target	6.8	10.4	Cherry Coke	6.8	13.4
Volkswagen Golf	7.0	14.3	Bullocks	6.1	17.0	Tab	6.4	11.9
Camaro 2—28	6.6	15.5	Ross Dress for Less	6.1	11.5	Dr. Pepper	6.4	11.3
Mazda RX—7 Turbo	5.4	13.7	Montgomery Ward	5.8	16.0	Pepsi Free	5.5	12.7
BMW	5.2	18.7	K—Mart	5.5	9.0	Safeway Brand		
						Cola	5.4	8.6
Pontiac Fiero 67	5.0	18.5	Benetton	4.8	15.9	Jolt Cola	5.4	9.2
Mercedes 2—seat	4.0	19.9	I. Magnin	5.4	17.0	Hansen's Cola	5.3	13.7
Convertible								
Corvette Convertible	3.0	17.4	Saks Fifth Avenue	4.8	18.4	Generic Cola	5.1	7.8
Porsche 911	2.6	17.5	Bloomingdale's	4.1	18.3	Diet Rite Cola	4.1	9.7
Convertible			(New York)					
Ferrari 308	2.6	19.5	Nieman Marcus	3.3	18.6	Weight Watcher's	3.5	9.4
			(Dallas)			Cola		
Rolls Royce	1.9	18.7	Giorgio Armani	2.0	18.9	Slender Cola	3.5	9.4
			Boutique					
Pearson Correlation	-.74		Pearson Correlation	-.49		Pearson Correlation	+.83	

Linguistic Hedges

In study 3, the participants were presented with sentence frames that formed linguistic hedges. The hedge terms used, "is almost" and "is sort of," were borrowed from Rosch (1975). The resulting sentence frames were: "_____ is almost _____" and "_____ is sort of _____." Two items from one of the previously studied categories appeared above each hedge. The participants were instructed to "please fill-in the two blanks with the two given words (one per blank) in whatever order seems most appropriate to you."

In total, the participants were presented with six sentence frames (three "almost" and three "sort of") and six pairs of items for each of the three categories studied (see Table 2). The items were chosen by reference to previously collected prototypicality data so one item was more prototypical of the category than the other. The frames were presented in a random order, and its reverse, counter-balanced across participants.

Results

Hypotheses One and Two

Mean prototypicality and mean summed attitude ratings for the categories of automobiles, clothing stores, and colas are shown in Table 1. Pearson correlations between the prototypicality and attitude scores of items within each category are shown at the bottom of the table.

Hypothesis one predicted that the relationship between prototypicality and global attitude should be positive among the brands in a category of inexpensive consumer products. The results confirm this hypothesis. The Pearson correlation between prototypicality and attitude for colas is .83, which is significantly different from zero, $t(16) = 5.95$, $p < .05$.

Hypothesis two predicted that in categories of products for which prestige, exclusiveness, or distinctiveness are more important purchase goals, the relationship between prototypicality and preference should be negative. The results for the automobile and clothing store categories confirm the hypothesis. The correlation between prototypicality and attitude in the automobile category was $-.74$, different from zero at $p < .05$, $t(16) = 4.40$. The same correlation for clothing stores was $-.49$, also different from zero at $p < .05$, $t(16) = 2.25$. The correlations between prototypicality and attitude in both the automobile and clothing store categories were also significantly different from the correlation in the cola category. The lower negative correlation in the clothing store category appears to result from at least two factors. First, as predicted, certain stores were rated as relatively typical places to buy clothes and were also favorably evaluated. Second, certain stores such as K-Mart were judged relatively atypical places to buy clothes, and were unfavorably evaluated. As noted earlier, when atypical but unfavorably evaluated exemplars exist in a category along with atypical but favorably evaluated exemplars the linear correlation between typicality and preference may be reduced.

The possibility of a curvilinear relationship between the prototypicality and attitude measures in the clothing store and automobile categories was tested by polynomial regressions. In both categories, the contribution to R^2 of predicting prototypicality ratings with a third degree polynomial model for the attitude measure was compared to the R^2 for a first degree model.

The third degree polynomial model resulted in no significant ($\alpha = .05$) contribution to R^2 for the automobile category ($F(1,14) = 1.45$) at $\alpha = .05$. The contribution to R^2 for the clothing store category was not significant at .05 but was significant at an alpha of .10 ($F(1,14) = 3.32$).

Hypotheses Three and Four

Table 2 shows how often the two category members presented with each sentence frame were used in the referent and non-referent positions in the sentence. If the choice between the positions was random, the chance that the two category members would be used in the referent position would be .50 for each.

The significance of departures from this expectation in the results for each sentence frame was tested by chi-square. Hypothesis three predicted that participants would use more typical instead of less typical category members as referents in linguistic hedges about colas. The results of the chi-square tests, also shown in Table 2, show that the more prototypical category member was significantly more likely to be used as a referent in 5 of 6 sentence frames about colas.

Hypothesis four predicted that participants would use less typical products as referents in linguistic hedges about automobiles and clothing stores. The results in Table 2 show that less typical category members were significantly more likely to be used as referents than more typical members in 6 of 6 frames about automobiles and 5 of 6 frames about clothing stores.

Discussion

The results suggest that typicality effects on preference and comparison are not generalizable across all product categories. In particular, if consumers regard prestige, exclusiveness, or novelty as important goals for purchasing the products in a category, they appear to perceive a negative relationship between typicality and preference, and tend to use less typical but more preferred products as cognitive reference points. Although these results appear intuitive, they are the first to demonstrate limits to the positive relationship between typicality and preference and the tendency to use more typical products as referents.

These findings have important implications for both marketing practitioners and consumer researchers. Marketing practitioners might have assumed from previous research that greater typicality would generally confer a variety of cognitive advantages on their product. These results show that this assumption needs to be carefully evaluated before it is applied to specific product categories.

To consumer researchers, the findings of the study suggest a need to focus research on categorization processes to investigating factors that moderate typicality effects and their limits of generalizability. Such efforts will help build a theory of categorization tailored to consumer decision processes.

The results should be regarded as exploratory, to be confirmed by later studies, for several reasons. First, only three product categories were studied. Second, the categories of automobiles and clothing stores were included in the study because consumers, particularly college students, are usually thought to be especially conscious of how cars and clothes influence their self-image and the image they project to others. The negative relationship between typicality and attitude might be weaker for other categories of more expensive,

Table 2
Results for Hedged Sentences

	Typi- cality	Ref. % Use	Non- Ref % Use	Chi- Square
<i>Colas</i>				
"___ is almost ___."				
Pepsi	9.3	0.83	0.17	10.7*
Diet Rite Cola	4.1	0.17	0.83	
New Coke	7.2	0.92	0.08	16.7*
Safeway Brand Cola	5.4	0.08	0.92	
Diet Pepsi	7.9	0.67	0.33	2.7
Tab	6.4	0.33	0.67	
"___ is sort of ___."				
Coke Classic	8.9	0.75	0.25	6.0*
Generic Cola	5.1	0.25	0.75	
Diet Coke	8.2	0.79	0.26	8.2*
Slender Coke	2.9	0.26	0.79	
Dr. Pepper	6.4	0.67	0.33	6.0*
RC Cola	7.6	0.33	0.67	
<i>Automobiles</i>				
"___ is almost ___."				
Porsche 911 Convertible	2.6	0.96	0.04	20.2*
Chevrolet Cavalier	8.4	0.04	0.96	
Ferrari 308	2.6	0.92	0.08	16.7*
Oldsmobile Cutlass	8.9	0.08	0.92	
Mazda RX-7	5.4	0.71	0.29	4.2*
Nissan Sentra	8.2	0.29	0.71	
"___ is sort of ___."				
BMW	5.2	0.96	0.04	16.7*
Buick Skyhawk	8.7	0.04	0.96	
Rolls-Royce	1.9	0.96	0.04	20.2*
Honda Accord	8.1	0.04	0.96	
Mercedes Conv.	4.0	0.83	0.17	10.7*
Chevy Nova	8.2	0.17	0.83	

*Indicates Chi-Square with 1 df is significant at $p < .05$

higher involvement goods and other populations of consumers. Finally, the participants rated their overall attitude toward the products—not their attitude toward the act of purchase. If the participants had been asked to rate their attitude toward purchase, their scores might have been substantially more negative toward, e.g., a

Table 2 (Continued)

	Typi- cality	Ref. % Use	Non- Ref % Use	Chi- Square
<i>Stores</i>				
"___ is almost ___."				
Saks 5th Avenue	4.8	0.87	0.13	12.6*
Sears	7.6	0.13	0.87	
Bloomingtons (New York)	4.1	1.00	0.00	24.0*
J. C. Penney	7.2	0.00	1.00	
Giorgio	2.0	0.87	0.13	13.5*
A Target Store	7.6	0.13	0.87	
"___ is sort of ___."				
Bullock's Broadway	6.1	0.63	0.37	1.5
Nieman Marcus (Dallas)	3.3	0.83	0.17	10.7*
Dillard's	8.5	0.17	0.83	
I. Magnin	5.4	0.78	0.22	7.3*
Goldwater's	7.5	0.22	0.78	

*Indicates Chi-Square with 1 df is significant at $p < .05$

Ferrari, and more positive toward, e.g., a Toyota. Nevertheless, the more expensive, less typical car would likely remain their ideal.

Future Research

The relationships between typicality, preference, and comparison should be explored in other types of categories. For example, do art collectors perceive a positive relationship between a work's prototypicality as a representative of a particular genre and their preference for the piece? Whitman and Slater (1979) suggest that such a tendency may exist. But creativity, atypicality, and uniqueness are also valued in art. Turning to non-product categories, typicality and affect might have interesting relationships in categories comprised of undesirable items like complaints about service in a restaurant. Perhaps more typical complaints tend to be evaluated less negatively than atypical complaints or vice versa.

As these examples suggest, the possibilities for further research are diverse. Future studies should explore the relationships between typicality and preference across a variety of categories, populations, and mediating factors.

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The Flip Side of the Persuasion Equation: Does a Product Influence a Spokesperson's Public Image?

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Abstract

Previous research on person perception and impression formation provides the theoretical background for an experiment to assess the influence of three variables on consumers' impressions of a spokesperson: the type of product endorsed, the amount of meaningful information consumers have about the spokesperson, and the presence or absence of a known celebrity as the spokesperson. Contrary to expectations, little evidence was found for the influence of any of these variables on consumers' impressions of spokespeople for two different products.

Introduction

Advertising is a fundamental source of information to consumers. Each day we receive advertising messages from numerous sources. Whether it is Bill Cosby touting the joys of eating Jello Pudding or a "typical" housewife marveling at the wonders of a particular laundry detergent, spokespeople are an important ingredient in an advertising campaign. To date, much of the relevant research on spokespeople has examined the credibility of spokespeople as persuasive communicators. Factors such as expertise, trustworthiness and attractiveness have been found to enhance a spokesperson's influence on others' attitudes and behavior (see Cooper and Croyle 1984; Petty and Caccioppo 1981 for reviews).

The research on spokespeople has been one sided. Communicators have been concerned with finding a persuasive spokesperson to "sell" their product, service or message. This paper examines the influence that a particular product may have on consumers' preceptions of the spokesperson marketing that product. If the product does influence consumers' perception of spokespeople, it is important that prospective spokespeople realize such effects. Further, when a spokesperson also serves as an advocate for other products there may be an interaction effect such that those other products may differentially influence consumers' impressions of the spokesperson.

Research on impression formation and change has focussed on the effects of schemas, or stereotypes, on individuals' perceptions of others. People often form impressions of, and make inferences about, others based on stereotypical or categorical cues such as occupation, age, race, and gender (Fiske and Taylor 1984).

These cues are particularly influential when a person is first forming an impression of another. For example, suppose a male meets a female for the first time at a party. His impression of her may differ depending on information that was provided prior to the introduction. The female may be intelligent, attractive and outgoing. However, if the male were told that she is a professor, his impression of her is likely to differ from one formed after being told that she is a fashion model. In the first case a professor schema will be evoked and particular attention will be paid to the fact that she is intelligent. Upon knowing this, he may infer that she reads a lot, enjoys philosophical conversation, and possesses other attributes consistent with the impression of professors as a group of people. However, if he is told that she is a fashion model, he may base his

impression on another schema--that of fashion models. Her attractiveness now becomes more relevant and he may make inferences about her vanity, superficiality, and other factors that may be relevant to a schema of fashion models.

This example highlights how schemas can "guide" information processing. That is, providing a schema label (such as "professor" or "fashion model") influences the inferences made about a person. Research indicates that once an individual places a person or objects into a particular category (schema), the person is likely to interpret information in a way that is consistent with the schema label (Zadny and Gerard 1974). They tend to remember items that are consistent with the schema label and often fail to remember items that are irrelevant to the label (Bower, Black and Turner 1979; Hastie and Kumar 1979; Srull 1981; among others). They even claim to remember information which, although consistent with the category, was never given about the particular stimulus.

For example, Cantor and Mischel (1977) gave subjects lists of adjectives that described a person. In one case subjects were told that the person described was an extrovert. The lists contained words that were moderately related to extroversion (i.e., entertaining). On a later recognition task, people falsely recognized prototypical words which were never given in the list (i.e., outgoing).

A schema has both facilitative as well as biasing effects on the impression formation process. It facilitates the process by implying a set of expectations about the person which can simplify information processing. For example, a spokesperson for athletic equipment may be categorized as an athlete and thus may be considered to be athletically skilled, healthy, and competitive. On the other hand, the label may bias perceptions because information that is not directly relevant to the label may not be fully processed (i.e., the athletic spokesperson may also be compassionate, honest, etc.) and thus does not influence one's impression of the person. These biases may give rise to incomplete, inaccurate, or unrealistic beliefs and expectations about a person.

A product endorsement may serve to cue a particular schema and thus may influence impressions in a manner consistent with the schema. If a product serves as a schema cue for the impression formation process, it then becomes important to understand the process by which impressions might be influenced by the product(s) one chooses to endorse.

Hypotheses

Past research on the effects of stereotyping indicates that once an individual is perceived to be a member of a particular category, stereotypical attributes are imputed to the individual. For instance, Taylor and her colleagues (Taylor, Fiske, Etoff and Ruderman 1978) provide evidence that stereotypical gender traits are attributed to an individual based solely on one's knowledge of their gender. Taylor et al. provided subjects with taped conversations between men and women. They had male and female versions of each

speaker (in which speech speed and intonations were matched). Later the men were rated as more influential, confident, analytic, and negative. Men were also rated as less warm and sensitive than women.

Based on findings such as these, it is expected that subjects will form an impression of a previously unknown spokesperson based on whatever schema is cued. The cued schema may then influence later inferences about the person. When forming an impression of a spokesperson, the product endorsement may serve as the schema cue. In order to form a meaningful impression of the spokesperson, subjects will rely on the evoked schema. Later judgments will reflect the schema used to process the information. Therefore, a subject's evaluations of a spokesperson's personality attributes will be influenced by the type of product that he or she endorses.

Expectation 1: Subjects will later rate a spokesperson higher on personality traits that are characteristic of the schema that was cued by the product than will subjects who received a different (product) schema cue.

A great deal of literature in marketing indicates that a consumer's level of knowledge about a product class influences the way she processes product information as well as the way she makes judgments and choices (Bettman and Park 1980; Edell and Mitchell 1978; Johnson and Russo 1981, 1984; Park and Lessig 1981; Sujun 1985; among others).

Knowledge may influence initial impressions as well. For example, Linville (1982) found that individuals made less extreme evaluations about people in their own groups ("in-group members") than they did about people in groups other than their own ("out-group members"). She attributed this to the complexity of the respondents' knowledge structures. People have more complex knowledge structures about the groups to which they belong than they do about groups that they do not belong to.

In the context of the present experiment, it may be that people who have less meaningful information about a spokesperson will make more extreme judgments about the person. Further, since they have less relevant information, they may be more dependent upon the given schema cue as a guide for their inferences. They are expected to rely upon stereotypic expectations regarding the spokesperson and thus they may later judge the person to possess "more" of personality traits that are characteristic of the schema cue than will subjects who have more meaningful information.

Expectation 2: Subjects with less meaningful information about the spokesperson will rate the spokesperson higher on personality traits that are characteristic of the cued schema than will subjects with more meaningful information.

Frequently, celebrities rather than "ordinary" people are used as spokespeople for products. It is likely that a product endorsement may have a different influence on the impressions formed of celebrity spokespeople than noncelebrity spokespeople since the celebrity already has a strong public image. Consumers have cues other than just the product from which to form an impression of a celebrity. Thus the schema cue

(product endorsement) may have less influence in guiding consumers' impressions of a spokesperson who is a known celebrity than an unknown spokesperson. Furthermore, since consumers may already have accumulated information about the celebrity spokesperson, the amount of meaningful information that is provided to them may no longer be relevant. Thus, it is expected that:

Expectation 3: Expectation 1 and Expectation 2 will be descriptive of consumers' judgments regarding an unknown spokesperson. The schema label and the amount of information will have less influence on subjects' judgments of a celebrity spokesperson.

Expectations 1-3 posit that consumers will infer certain personality traits to be descriptive of a spokesperson depending on the product that is endorsed, the amount of information given, and whether or not the spokesperson is a celebrity. The basis for the expectations is that the product serves as a schematic cue for processing information and making inferences about a person.

In a sense, the schema cue triggers a category, or stereotype, that one has formed over time and has "stored" in memory. When a person perceives another person (or an object) as belonging to a particular category, a person may draw on their past knowledge and experience regarding members of that category and may then make inferences about the person based on the stereotype (as in the professor/fashion model example). A great deal of research indicates that schematic cues do guide information processing in this manner.

Much of the evidence for such effects has been provided by examinations of recall and recognition measures gathered in experimental settings. Individuals seem to show greater recall of information that is consistent with an evoked schema than of information that is irrelevant to the schema. For example, Cohen (1981) showed subjects a videotape of a woman and her husband eating dinner and having an informal birthday party. In one condition, subjects were told that the woman worked as a librarian. In another condition, subjects were told that she was a waitress. When subjects were given the librarian cue, they more accurately remembered items that were characteristic of that occupational role (i.e., listens to classical music, wears glasses) than did subjects given the waitress cue. Subjects given the waitress cue more accurately remembered "waitresslike" items (i.e., she drinks beer and watches television).

It is also likely that subjects might recall items that are relevant to the schema cue but are not provided in a description of the spokesperson. Recall intrusions of this type are an indication of subjects' elaboration of the information. For example, if one believes that used car salesmen are generally sleazy, one may incorrectly recall being told that the used car salesman down the street is sleazy when in fact he was not told that. Both types of recall--better recall of schema-consistent information and schematic intrusions--are considered to be evidence of schematic processing (Bower, et al. 1979). Thus it is expected that:

Expectation 4a: Recall of traits characteristic of one schema cue will be greater for those who were given that cue than for subjects given a different cue.

Expectation 4b: Subjects will misremember more items that are characteristic of the schema cue given to them than will subjects who are given a different schema cue.

Since subjects who receive less meaningful information about the spokesperson are expected to rely upon the schema cue to a greater extent, the recall of schema-consistent information and schematic intrusions are expected to be particularly evident for subjects who receive less meaningful information.

Expectation 4c: Expectations 4a and 4b will be more prevalent in the recall of subjects who are given little meaningful information about the spokesperson than for subjects given more meaningful information.

When the spokesperson is a celebrity, however, subjects are expected to rely upon the public image of the celebrity to a greater extent than the schema cue or the amount of information (as stated in Expectation 3). In a sense, the celebrity's public image may act as a cue for processing information about the spokesperson. If subjects are relying upon the image of the celebrity we may expect to see recall intrusions that are relevant to the celebrity's public image.

Expectation 4d: Subjects who are given a known celebrity as a spokesperson will show (a significant number of) recall intrusions that are consistent with the image.

Method

In this study, spokespeople were selected for two different causes: the homeless and a defense contractor. These two types of "product" endorsements were used because they were found to imply very different schemas. They are also products where some type of emotional involvement is assumed on the part of the spokesperson. One may be able to make stronger inferences about a spokesperson for the homeless, an endeavor in which some emotional involvement is assumed, than if the person is a spokesperson for products such as coffee or deodorant. These product cues should serve as a strong test of the expectations.

A pretest was conducted with 20 subjects to ascertain the characteristic, or schema-relevant, personality traits of each type of spokesperson. Traits were chosen for use in the experiment if they were perceived by the pretest subjects to be characteristic of one type of spokesperson and not the other.

Subjects

Seventy-two subjects volunteered to participate in the study. They responded to flyers posted on the UCLA campus. All subjects were paid 10 dollars for their participation in the study.

Independent Variables

Three independent variables were manipulated in this study. There were two levels of each variable,

resulting in an eight cell design ($n = 9$ per cell). The three independent variables are (1) The schema cue (type of product endorsed): Homeless vs. Defense Contractor, (2) The amount of meaningful information in the description: Less Meaningful vs. More Meaningful, and (3) The image of the spokesperson: Celebrity vs. Unknown spokesperson.

Procedure

Subjects were told that they would be participating in a study of how consumers form impressions of spokespeople and products. They were told that they would receive a booklet in which a spokesperson would be described. They were asked to read the description and then to answer the questions that followed. Each booklet contained a written description of a spokesperson on the first page and relevant measures on the following pages. Subjects were randomly assigned to an experimental condition.

In one condition, subjects were told on the first page of their booklet that they would be reading a description, and forming an impression, of a spokesperson for the homeless. In another condition they were told that they would be reading a description, and forming an impression, of a spokesperson for a defense contractor.

Additionally, half of the subjects were told that the spokesperson was Bob Hope and the other half were not given any specific information about the spokesperson's identity. Bob Hope was used as a celebrity image because pretest subjects felt that he could realistically be a spokesperson for either type of product and he is also a well-known figure with an identifiable image. Thus, the first page of the booklet determined the schema cue that each subject received as well as the presence or absence of a celebrity image.

The spokesperson was described to the subject on the second page of the booklet. Subjects received one of two versions of the description: a description with less meaningful information or a description with more meaningful information. The description with less meaningful information contained four personality traits which were relevant to a spokesperson for the homeless (Spokesperson H traits), four personality traits which were relevant to a spokesperson for a defense contractor (Spokesperson DC traits), and 12 traits which were irrelevant to both types of spokespeople. This description was intended to have less meaningful information than the alternative description which contained 10 Spokesperson H traits, 10 Spokesperson DC traits, and no traits irrelevant to both types of spokespeople. Thus both descriptions had the same amount of information, what differed was the meaningfulness of this information with respect to the two possible schemas used as cues. The order in which the traits were presented in the description was varied to control for possible order effects in impression formation and in recall.

At the conclusion of the description, subjects were asked to write down their impression of the spokesperson. This measure was given to provide closure for the subjects and to solidify the impressions they had formed. As far as subjects knew, this was the conclusion of the study.

The dependent measures of interest were asked after an unrelated intervening task (a questionnaire for a separate study by another researcher) had been completed. The intervening task was necessary to make sure that

subjects were not basing their judgments and recall on information in short-term memory. The schema cue provided at the beginning of the study, as well as the amount of information given and the presence or absence of a celebrity image, was expected to influence judgment and recall of particular attributes of the spokesperson over time.

Dependent Variables

Two dependent variables were measured in the study: subjects' ratings of the spokesperson on eight different personality traits (relevant to Expectations 1-3) and subjects' recall of the information given to them in the original description of the spokesperson (relevant to Expectations 4a-4d).

Subjects were asked to rate the spokesperson on a 9-point scale on eight traits (where 9 indicated that the personality trait was very representative of the person and 1 indicated that the trait was not at all representative of the person). Four of the traits used in the judgment task were characteristic of spokespersons for the homeless (idealistic, sympathetic, individualistic, and openminded) and four of the traits were characteristic of spokespersons for a defense contractor (clean, educated, self-critical, and definite). A mean rating was computed for each of the two sets of personality traits and these two ratings were then used as dependent measures in the analysis.

The personality traits used in the judgment task were also elicited via the pretest and differed from those given in the original description. All eight of these traits were perceived by pretest subjects to be very characteristic (mean rating of 6.3 or greater on a nine-point scale) of one type of spokesperson and not the other (mean rating of 5.0 or less).

Subjects were then asked to recall the information given to them in the description of the spokesperson at the beginning of the study. They were then asked a variety of questions to ascertain their degree of knowledge about defense contractors and homeless people. Upon completion of the questionnaire, subjects were thanked, debriefed, and were then paid for their participation.

Results and Discussion

The data were analyzed using a 2 (Schema Cue: Homeless vs. Defense Contractor) X 2 (Information: More vs. Less) X 2 (Image: Celebrity vs. Unknown) completely randomized analysis of variance. There were nine observations per cell. Subjects' personality trait judgments and recall were used as dependent variables in separate analyses.

An average rating was computed for the four traits relevant to spokespersons for the homeless and for the four traits relevant to spokespersons for a defense contractor. These two averages were the dependent variables for judgments. Recall was analyzed according to the number of correct traits recalled which were relevant to each type of spokesperson, the number of memory intrusions relevant to each type of spokesperson, and the number of memory intrusions characteristic of Bob Hope's celebrity image (i.e., funny). The recall data were coded by a judge who was blind to the treatment condition of the subjects.

Results of Judgment Data

It was expected that subjects in the homeless condition would rate the spokesperson higher on personality traits that pretest subjects considered

characteristic of such spokespersons (Spokesperson H traits) than would subjects who were given the defense contractor cue. These ratings were expected to be more extreme for subjects given less meaningful information about the spokesperson. However, the cue and the amount of information were not expected to be significant influences upon the impression formed by subjects who had a celebrity in mind at the time they read the description of the person.

The analysis was performed separately on the spokesperson H traits and the spokesperson DC traits.

Traits Relevant to Spokespeople for the Homeless: A significant Amount of Information x Image x Cue interaction was found ($F [1,64] = 6.31, p < .05$). There was also a significant main effect for Image ($F [1,64] = 3.93, p < .05$) such that subjects in the unknown spokesperson condition rated the spokesperson higher on Spokesperson H traits (mean = 5.84) than did subjects in the celebrity spokesperson condition (mean = 5.32). Of greater interest is the three-way interaction and these means are graphed in Figure 1.

The results were not as expected. The only significant difference was found for subjects who received a defense contractor cue and more meaningful information. In this situation, subjects rated the spokesperson higher on Spokesperson H traits when they had an unknown spokesperson to consider than when Bob Hope was presented as the spokesperson ($t [16] = 4.57, p < .01$). This pattern was not shown for subjects in the homeless cue condition, however.

Subjects given the homeless cue did *not* perceive the Spokesperson H traits to be any more characteristic of the spokesperson than did subjects given the defense contractor cue (contrary to Expectation 1). Furthermore, subjects with less meaningful information did *not* make more extreme judgments than did subjects with more meaningful information (contrary to Expectation 2). The presence of a celebrity spokesperson did not influence the judgments of subjects given the homeless cue (in part, contrary to Expectation 3) but did influence the judgments of subjects given the defense contractor cue. In this case, the presence of absence of a celebrity as the spokesperson differentially influenced the judgments of only the subjects given more meaningful information.

Traits Relevant to Spokespeople for Defense Contractor: A significant main effect for cue was found ($F [1,64] = 5.26, p < .05$) such that subjects who were given the defense contractor cue rated the spokesperson higher on Spokesperson DC traits (mean = 7.35) than subjects given the homeless cue (mean = 6.70). There was also an Image x Cue interaction ($F [1,64] = 7.20, p < .01$). The interaction is depicted in Figure 2.

Subjects given the defense contractor cue rated the spokesperson higher on relevant traits when an unknown spokesperson was provided than when the spokesperson was a celebrity ($t [34] = 2.31, p < .05$). The presence of an image did not influence subjects' ratings on these traits when they had been given the homeless cue ($t [34] = 1.59, ns$). Evidently, subjects given the defense contractor cue were sensitive to the presence or absence of a celebrity image, whereas those given the homeless cue were not. This was true for their judgments regarding Spokesperson DC traits (regardless of the amount of information) as well as Spokesperson H traits (only when given more information).

Figure 1
The Three-Way Interaction Between Cue, Image, and Amount of Information For Spokesperson H Traits

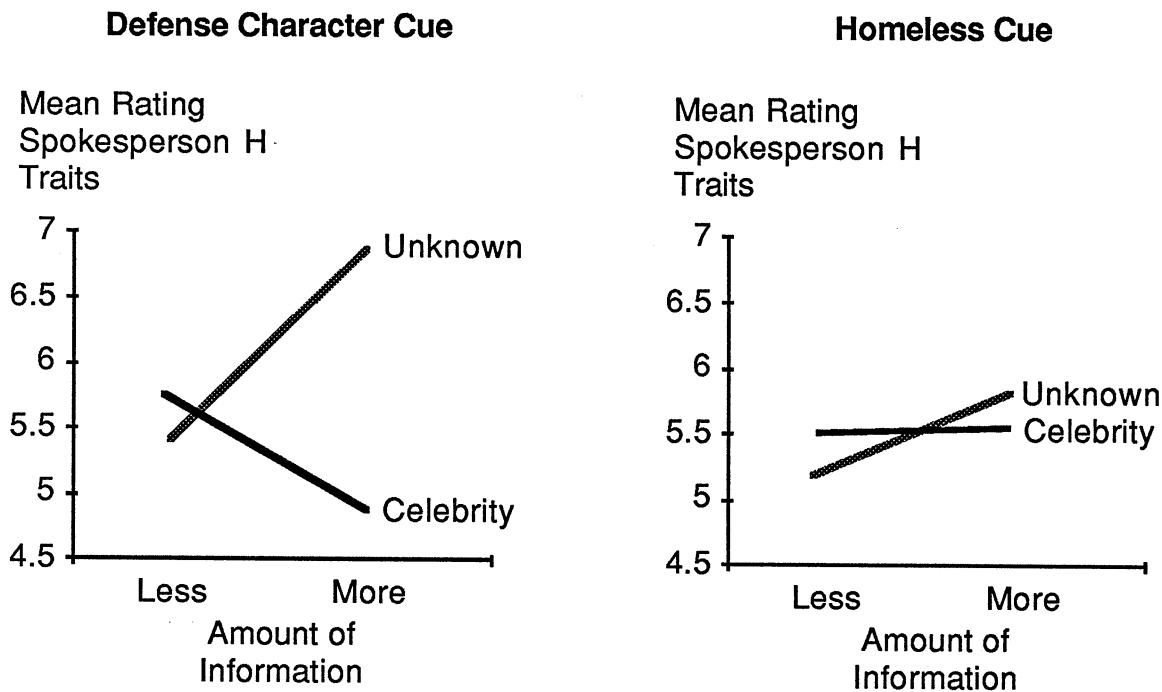
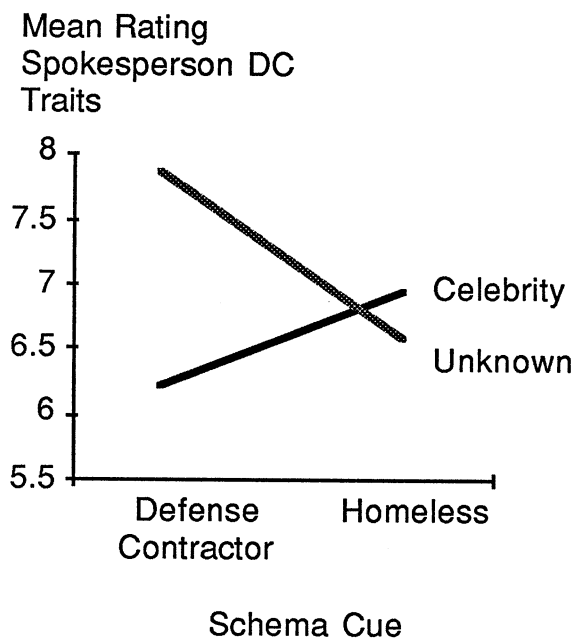


Figure 2
Image x Cue Interaction For Judgments Regarding Spokesperson DC Traits



Results of Recall Data

Manipulation Check: Amount of Information: It was assumed that subjects in the more information condition would have significantly more information in memory with which to form an impression than would subjects in the less information condition. The manipulation can be verified if subjects in the more information condition recall more (correct) attributes than subjects in the less information condition. The manipulation was verified by a significant main effect for amount of information for recall of Spokesperson H traits ($F [1,64] = 9.04, p < .01$) as well as the recall of Spokesperson DC traits ($F [1,64] = 8.97, p < .01$). In both cases, subjects in the more information condition recalled more information than subjects in the less information condition.

Correct Recall and Spokesperson Intrusions: It was hypothesized that subjects' recall of the spokesperson would provide some additional support for the hypotheses regarding judgments. If subjects are relying on the schema cue then they should recall more of the schema-consistent traits (Expectation 4a) as well as show more memory intrusions for traits relevant to the schema (Expectation 4b) than subjects given the other schema cue. It was also thought that the amount of information given to subjects would interact with the influence of the schema cue (Expectation 4c).

Expectations 4a-c were not supported by the data. There was no significant main effect for schema cue nor was there a Cue x Amount of Information interaction for recall of Spokesperson H or DC traits. Thus, there is little indication that consumers were relying upon the schema cue to form an impression of the spokesperson.

Image Intrusions: Subjects given a celebrity image for a spokesperson are expected to rely on that image when forming an impression of the person. If they are relying upon the image, they should show memory intrusions that are consistent with the celebrity's image. Subjects in the celebrity condition did show intrusions consistent with Bob Hope's image ($t[35] = 2.24, p < .05$). This indicates that subjects were utilizing the image when processing the information about the spokesperson.

Conclusion

A great deal of research has examined the impression formation process. That people form impressions and make inferences based on stereotypic or categorical cues is not new (Taylor and Crocker 1981). However, the range of cues that have been examined is somewhat limited. We do know, for example, that people often form impressions of others based on age, race, gender, and occupation (see Fiske and Taylor 1984). People do seem to be quite sensitive to salient cues when they form impressions of others. This study attempted to extend that research to an advertising domain and to examine the influence of a very salient cue, a product, on the impression formation process for a particular type of person, a spokesperson.

Interestingly, the expected findings were not obtained. Since the expectations posited in the paper were based upon research on person perception in general, the findings indicate that there is something unusual about the way consumers form impressions of spokespeople.

The failure to support the hypotheses might indicate that people perceive the product cue as a less meaningful cue than other cues that are often used in person perception research (such as occupation or gender). It could also be that the impression formation process for spokespeople is very different than that for people in other occupational and societal roles. Spokespeople are often advertising a product because they want the paycheck that is associated with such work. In fact, David Ogilvy, of Ogilvy & Mather, has stopped using celebrities in his advertisements because he claims that the audience assumes that the celebrity has been bought off (Ogilvy 1983). Ogilvy's belief is substantiated by research done by Video Storyboard Tests, an advertising research company (see Sherman 1985).

In part, to account for just such an effect, the celebrity image and no image condition were included in the study. Also, the products chosen for this study were ones where some type of emotional involvement is assumed on the part of the spokesperson. Yet, the results did not show a strong effect for the type of product, the image, or the amount of information in the impression formation process for spokespeople.

Assuming no fatal flaws in the study, the results indicate that further examination of the impression formation process is needed. Spokespeople may be perceived to be special cases when it comes to forming an impression of them. For example, people learn about spokespeople by seeing them or hearing them communicate through some medium. Further research should examine the differences between media-mediated impression formation and interpersonal-mediated impression formation.

The cues used in the impression formation process for spokespeople may not be product-related cues.

Person perception literature has examined only a limited number of cues as factors in the impression formation process. Further research might focus on different cues that might be used in such a situation. An in-depth, perhaps even qualitative, study would be a positive next step in this direction. What are the factors that influence a spokesperson's public image? The public should be able to provide some insight in that respect.

This also highlights the artificiality of the experimental study in this situation. It is not unusual for experimenters to use paper and pencil measures in laboratory studies of person perception and impression formation, and to achieve significance in their results. Much of the research on person perception has been done with paper and pencil measures (however, see Cohen 1981 and Zadny and Gerard 1974 for a different approach). The use of paper and pencil measures in an experimental setting, however, may be more appropriate for typical impression formation studies than for an examination of others' perceptions of spokespeople due to the media-related nature of their presentation. Special care should be given to matching the presentation of the stimuli with its typical presentation in the real world.

In general, our knowledge about impression formation and change has been built from one type of research setting. Perhaps future studies should examine the impression formation process in various settings. More realistic and involving situations may bring new insight to the phenomenon.

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Celebrity Endorsements - Scripts, Schema and Roles: Theoretical Framework and Preliminary Tests¹

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Abstract

Subjects were exposed to twelve celebrity type/endorser cue combinations in order to test a script- and schema-based model of celebrity endorsement. Print ads were used. Processing time and product type were also varied. This research differs from previous endorser research in two important ways: (1) it considers the effectiveness of different kinds of celebrity endorsers and (2) it focuses on mechanisms required to integrate celebrity and product information. Information recall measures were significant, but only sometimes in the directions predicted. The researchers conclude that three different effects were observed: endorsement effects, incongruity effects, and distraction effects. All three effects are discussed in terms of script and schema processing.

Introduction

Bill Cosby, Linda Evans, Cliff Robertson and Jimmy Connors--what do they have in common? Aside from being well-known celebrities, they have all endorsed consumer products. Although the use of celebrity endorsers dates back to the 1930's (e.g., Johnny Weissmuller for Wheaties), it is uncertain that such testimonials are always effective. From the multi-million dollar contracts awarded to celebrity endorsers (e.g., James Garner for Polaroid), advertisers apparently assume so. Polaroid credits Garner and Mariette Hartley with selling two million Polaroid cameras (McMahan and Kile, 1982). On the other hand, McCollum/Spielman & Company (*Topline*, 1985) report that only 41% of the celebrity commercials they have tested have above average brand awareness and influence on consumer attitudes towards the product.

How do consumers view the relationship between a famous person and a product they are considering? What selection criteria for celebrity endorsements should marketers consider? In light of the intense use of celebrities as product spokespeople, answers are needed to determine formulas that maximize celebrity endorsement effectiveness.

Prior Research on Celebrity Endorsers

To date, few academic researchers have studied celebrity endorsements. Friedman and his colleagues (Friedman and Friedman, 1976, 1979; Firework and Friedman, 1977; Friedman, Santeramo, and Traina, 1979) explored several aspects of this issue. They found a positive relationship between how much a celebrity was liked and how much he/she was trusted. However, in two different tests, they found mixed results across endorser types. Firework and Friedman (1977) found no

significant differences in purchase intention across test advertisements that employed experts, celebrity non-experts, and typical consumers. Conversely, Friedman and Friedman (1979) found an endorser by product interaction. Experts were found to be more effective for household durable goods, whereas celebrities were more effective promoting luxury goods.

In a similar study, Freiden (1982) found that the use of expert endorsers resulted in more favorable product attitudes compared to celebrity and ordinary consumer endorsers. More recently, Swerdlow (1984) found that, between buyers and non-buyers of a product, (1) there were no differences in the consumer's ability to associate celebrities with the products they endorse and (2) no noticeable difference in celebrity influence on buying behavior.

Although there is some evidence that an expert may, in fact, be the best endorser, findings are mixed. In fact, Sternthal and his colleagues (Dholakia and Sternthal, 1977; Sternthal, Dholakia, and Leavitt, 1978) found that situations exist where a low credible source is equal to or greater than a highly credible source in terms of effectiveness. This work reflects the earlier psychological research on source credibility carried on at Yale University in the 1950's (Hovland and Weiss, 1951; Kelman and Hovland, 1953; and Hovland and Mandell, 1952). In addition, endorser effectiveness may be affected by other ad-related or consumer-related variables. Aaker and Brown (1972) suggest that the impact of an advertising variable may be influenced by copy objectives. Friedman and Friedman (1979) point out that spokesperson effectiveness might be a function of communication goals. Pitts, Canty, and Tsalikis (1983) found that personal values increased the influence of a positive message and changed the effect of expertise on attitude toward a social ideal.

Although several studies have compared celebrity endorsers to other types of endorsers, prior research has not explored the relative effectiveness of different kinds of celebrity endorsers. Once advertisers decide to use a celebrity, they must decide which celebrity to use. Further, they must consider how the celebrity should be positioned with respect to the product? *The purpose of this study is (1) to explore the effectiveness of different celebrity endorser types and (2) to see whether positioning cues that define the role of the endorser vis a vis the product can influence that effectiveness.*

Before taking up these questions, it is important to establish an appropriate conceptual framework: one that allows researchers to consider (1) how several forms of old knowledge interact, (2) how old information interacts with new, and (3) how the structure of the ad mediates these various levels of integration. Script and schema theory offer such a framework (Crocker, 1984; Schurr, 1986; Hunt, Bonfield, and Kernan, 1986).

Endorsement Scripts and Endorser Schema

Schema are higher-order cognitive structures which are thought to guide perception, thought and action (Mandler, 1982). Schema may affect (1) the selection,

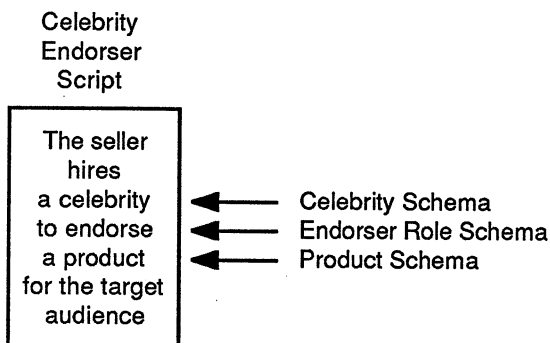
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(2) abstraction, (3) interpretation, and (4) integration of new information (Alba and Hasher, 1983). Schematic theory offers several advantages over other theories of memory and information processing: it posits the existence of higher order memory structures, explains unitary access to entire sets of knowledge, accounts for selective attention, encoding and retrieval, accounts for the purposefulness of processing, and emphasizes relational context as the basis of meaning (Brewer and Nakamura 1984, Alba and Hasher 1983). Schema organize perception by organizing expectations.

Researchers distinguish among several kinds of schema (Hastie 1981). We suggest that *celebrity endorsements often involve four types of schema: scripts, role schema, individual person schema, and object schema*. Figure 1 suggests how these four schema might be related within a celebrity endorsement. Person, role and object schema are integrated within the context of the script.

Figure 1
A Conceptual Model of Different Schema that Operate Within A Celebrity Endorsement



Scripts are event-schema that describe the prototypic structure of commonplace actions, such as, "Eating at a restaurant" (Abelson 1976, Schank and Abelson 1977). Like all schema, scripts are propositional and semantically encoded knowledge structures (Lord 1980), but unlike some schema, scripts are highly abstract, temporally organized, and hierarchically structured (Abbott and Black 1980). Since scripts categorically define the principle actions, actors and objects found in a recurring situation (Abelson 1976), they facilitate the study of individuals, objects and roles within organized contexts (Calder and Schurr 1981, Schurr 1986).

Roles are relational-schema used to explain the intention and behavior of people in specific situations (Hastie 1981). They are "relational" in that they define the set of probable relationships among actors and objects within the event. Within the "Eating at a restaurant" schema, people can play many different roles: waiter, patron, or someone entertaining friends. Scripts define both those actors characteristic of a stereotypic event and the roles associated with each actor.

Individual person schema and *object schema* are trait-based impressions of specific people and things. Their development depends on one's prior experience with the person or object in question. Unlike role schema, person and object schema are not situation specific. For example, one can possess schema for Julia

Child and chocolate mousse. Either schema might be activated in the context of various scripts, "Eating at a Restaurant" or "Preparing a Dessert." Furthermore, they may be activated in the context of various roles, "Julia Child as the person eating out" or "Julia Child as someone who recommended this restaurant."

Ads can be viewed as scripts, that is, as prototypic rhetorical structures that present new information within a conventional format. Moreover, different kinds of ads, by having their own traditions of structure and content, involve different kinds of scripts: the before-after comparison, the expert testimonial, the slice of life, and the celebrity endorsement. Through experience, consumers probably develop strong expectations concerning the events, actors and objects associated with a particular type of ad. For instance, "endorsements" typically involve three actors (seller, endorser, and target), one object (the product), and a protypic sequence of events:

- (1) [the seller employs the endorser]
- (2) the seller asks the endorser to use or evaluate the product
- (3) the endorser tries the product
- (4) the endorser communicates his/her findings to the target
- (5) the endorser urges the target to consider the product
- (6) [the seller pays the endorser]

In a particular endorsement, various script elements can be missing. Typically, events #1 and #6 are only hinted at by small print that reminds viewers that the ad is a "compensated endorsement." In other instances, events #2 and #3 may be omitted; however, once the viewer recognizes that the ad is an endorsement, he/she assumes that a product-related experience of some kind has occurred. The point is this: if most viewers possess a script for "commercial endorsements," recognition of any element from that script can activate the entire script, and events or variables that are not specified by the current stimulus can be supplied by generic default values from memory.

In a *general endorsement script*, "endorser" serves as a generic category. There are, however, many kinds of endorsers, including humorous, attractive, expert, likable and celebrity endorsers. These endorser traits may be consistent, inconsistent or irrelevant to the role schema implied by a specific script. This study concerns only likable expert and likable nonexpert celebrity endorsers.

When actors serve as endorsers, they are used to activate social and occupational stereotypes (the typical policeman, the typical steelworker, the typical dairy farmer, the typical yuppie). Once the stereotype is activated, a host of cognitive and affective information is brought to bear on the interpretation of the script.

Celebrity endorsements are a special kind of endorsement: By definition, celebrities are people who are well-known -- individuals for whom most people have well-developed individual person schema. Whether or not this preexisting person schema helps should depend

on four factors: (1) the relative development of the celebrity schema, (2) the overall affect one attaches to the celebrity schema, (3) the appropriateness of the celebrity schema in regard to the role schema, and (4) the appropriateness of the celebrity schema in regard to the product schema.

If a particular celebrity endorser is well-known, well-liked, positively associated with the product under consideration, and capable of being viewed in an appropriate endorser role, script processing is likely to benefit from the activated celebrity schema. Indeed, given sufficient time, the viewer should be able to integrate material from the celebrity schema into the product schema, so that the entire ad is perceived and remembered as one unit. The endorsement script and the role schema mediate this integration by implying how information in the celebrity schema should relate to information in the product schema. On the other hand, if the celebrity (though well-known and well-liked) cannot be associated with the product and/or cannot be viewed as a typical endorser, then script processing might be impaired, so much perhaps that the celebrity schema and the product schema are never integrated.

Variables of Interest and Research Hypotheses

This study manipulates two variables within the celebrity endorsement script: (1) the preexisting product relatedness of the celebrity schema and (2) embedded verbal cues that may facilitate activation of a suitable endorser role.

First, we consider two types of celebrities (celebrities who have strong preexisting relatedness to the product and celebrities who have no preexisting relatedness to the product). Strong preexisting product relatedness is operationalized as perceived expert knowledge of and professional connection with the product category [expert celebrity endorsers]. Conversely, no preexisting product relatedness is operationalized as the perceived absence of special knowledge or professional connection with the product category [product irrelevant celebrity endorsers].

H1 A product relevant celebrity schema should produce better recall of product information than a product irrelevant celebrity schema.

The subject's prior knowledge about the expert celebrity should allow him/her to infer an appropriate endorser role schema (expert) and thus facilitate the processing of the ad as an endorsement. On the other hand, the product irrelevant celebrity schema does not contain information required to infer an appropriate role schema and thus should not facilitate the processing of the ad as an endorsement.

Next, we consider the role of advertiser-supplied cues that may facilitate perception of the celebrity as a suitable endorser. Three types of cues were employed: cues which suggest that the celebrity is an expert, cues that suggest that the celebrity is a typical user of the product, and cues that leave the role of the celebrity unspecified.

H2 Cues that imply a specific endorser role (expert or typical user) should lead to

greater recall of product information than cues that are neutral.

Again, since script processing requires not merely the successful activation of the product schema and the celebrity schema, but also the activation of a role schema capable of linking the other two, information that helps a subject to activate or construct an acceptable endorser schema will facilitate overall processing of the ad.

How will these three levels of role cue interact with the two levels of celebrity endorser?

H3a Expert celebrities should produce greater recall when combined with expert cues (compared to neutral cues).

H3b Expert celebrities should produce greater recall when combined with typical user cues (compared to neutral cues).

In the first case, the "expert" cues should reinforce the endorser role (expert) implied by the preexisting celebrity schema: from the subject's point of view, an easy job (seeing the connection) should become easier. In the second case, "typical user" cues have the potential for making the expert endorser more likable or attractive. On the other hand, the addition of a dimension that is orthogonal to dimensions in the celebrity schema, could confuse or delay processing. Still, given sufficient time to process the ad, H3b should hold.

H4a Unrelated celebrities should evidence diminished recall when accompanied by expert cues (compared to neutral cues).

H4b Unrelated celebrities should evidence diminished recall when accompanied by typical user cues (compared to neutral cues).

Since the subject has a schema for the unrelated celebrity that is totally unrelated to the product, the addition of expert cues should only heighten the level of incongruity between the celebrity and the endorser role. This heightened inconsistency might cause the subject to focus disproportionate attention on nonproduct-related portions of the message and thus impair processing. In the second case, although subjects are unlikely to view unrelated celebrities as typical users, they may accept the idea if it is suggested by new information ("typical user" cues) and they are allowed sufficient time to process this new information.

Finally, the investigators were uncertain how much time would be required to observe the predicted effects. Therefore two levels of processing time were employed.

H5a In all conditions, information recall should improve with additional processing time.

H5b In several conditions, the predicted results may only appear with longer processing time. This is most likely with interaction effects involving either celebrity schema and the "typical user" cue (H3b and H4b).

In addition to the three variables that are manipulated (preexisting product relatedness of the celebrity schema, cues that facilitate activation of a suitable endorser schema, and time), a number of other script- and schema-related variables are held constant across all treatments: product information, layout, amount of text, number of relational cues, likableness and familiarity of the celebrity. Two products were used to provide replication.

Methods

Subjects: One hundred and ninety-two undergraduates at a large state university participated in the experiment. The design allowed for the testing of multiple experimental conditions within the students' own classrooms, with 25-30 students per class participating at any one time.

Procedure: The experimenter distributed booklets to all subjects. Each booklet contained two sections, and each section contained advertising stimuli and questions. The first page of the booklet included a brief statement of the study's purpose, a cover story and instructions about the study's procedures. Subjects were informed that the study concerned the evaluation of several print ads and that the marketing department was working with the advertising department on this joint project. After subjects read the instructions, the experimenter verbally clarified the procedure.

Each section of the booklet contained five magazine ads: four filler ads and one target ad. The experimental ad appeared third to control for possible primacy or recency effects. Ads were separated by blank pages. The procedure required subjects to view each ad until instructed to turn the page. Following each 5-ad sequence, subjects answered questions related to the ads in that section. After completing the entire booklet, subjects were asked demographic questions, debriefed and dismissed.

Target ads: Each target ad was structured using a conventional endorser format that is frequently used in print advertising. Each target ad included (1) two cues related to the celebrity schema (a picture and the celebrity's name), (2) two cues related to the product schema (a picture and the brand name), (3) cues (as part of the text) that specified (or failed to specify) the celebrity's role, and (4) four pieces of information about the product.

Manipulations: Booklets were collated to permit optimal balance between combinations of celebrity endorsers, types of cues, products, and processing time. Each combination was repeated an equal number of times across orders with no endorser/message combination repeated twice in the same booklet.

Two products were used to determine whether the results were generalizable across product classes. After pretesting several products for student interest and gender bias, a car was chosen to represent hard durable goods, and a tennis shoe was selected to represent soft consumable goods. In half the booklets, the car ad appeared in the first section and the tennis shoe in the second; in the other half, the car ad was found in the second section and the tennis shoe in the first.

Two celebrity endorsers were chosen for each product on the basis of their relatedness with the product category. Pretests were used to determine the product-relatedness, likability, and familiarity of the endorsers. For the automobile, Richard Petty and Pee Wee Herman were chosen to represent high and low product

relatedness, respectively. For the tennis shoe, Chris Evert Lloyd and Bette Midler were selected.

The amount of time allowed for the subjects to process each ad was systematically varied. For one section of the booklet, subjects were allowed only 20 seconds to process each ad, while in the other section, 60 seconds were allotted. For half of the subjects, the 20 second condition came first; for the other half, the 60 second condition came first.

Cues related to different endorser roles were inserted into the ad's text. See Table 1. Expert cues emphasized that an active comparison and judgment had been made between the advertised brand and other competitive products. The words "judges," "evaluate," and "comparing" were used to suggest an expert role. Typical user cues implied that the endorser had used the product as any normal consumer might. The terms "experiences," "try out," and "driving" (or "wearing") were used to establish this testimonial theme. Neutral cues were worded passively and conveyed no reference to either an evaluation or product use ("and," "comment on" and "seeing").

Dependent Measures: Each ad contained four pieces of product-related information. See Table 2. After answering questions on one of the non-experimental ads, subjects were given an unaided test of recall for specific information in the target ad. Subjects were given four lines to list all the information they could recall. Three minutes were allowed for this task.

Results and Discussion

An overall ANOVA was performed on the 2 (celebrity relatedness to product: expert vs. non-expert) X 3 (relational cue: expert vs. typical user vs. neutral) X 2 (processing time: 20 vs. 60 seconds) X 2 (product: car vs. shoe) design. Although replication (across products) was sought, the overall analysis yielded effects that varied by product. Consequently, separate ANOVAs were run on each product.

The overall effect of processing time: H5a predicted that recall of product information will generally improve with additional processing time. Subjects were

Table 1
Expert, Typical User and Neutral Cues

Expert Cues:

Richard Petty/Judges/The New Toyota Corolla
"The people at Toyota asked me to evaluate the new Corolla. After comparing it with other cars, I'm most impressed by its ..."

Typical User Cues:

Richard Petty/Experiences/The New Toyota Corolla
"The people at Toyota asked me to try out the new Corolla. After driving it, I'm most impressed by its..."

Neutral Cues:

Richard Petty/And/The New Toyota Corolla
"The people at Toyota asked me to comment on the new Corolla. After seeing it, I'm most impressed by its ..."

Table 2
Product Information Contained In Each Target Ad

Car Ads:	(1) quick acceleration (2) fuel efficiency (3) power rack and pinion steering (4) low maintenance cost
Shoe Ads:	(1) good lateral stability (2) fashionable style (3) high grade rubber outsole (4) traction on all surfaces

allowed either 20 or 60 seconds to process each target ad. In general, additional time led to more complete recall of the four product-related statements (1.92 vs 2.48, $p = .0001$).

The differential impact of processing time: H5b suggested that processing time may be more significant whenever subjects are required to process less familiar or less easily related information. Two differential effects are worth noting. First, additional time has a greater impact on the recall of tennis shoe information than on the recall of car information.

	20	60	Increase
Shoe	1.83	2.46	.64
Car	2.01	2.50	.47

Subjects may have been less familiar with tennis shoe information than car information. (See Table 2.) As a result, recall for shoe information at 20 seconds is lower than recall of car information at 20 seconds. On the other hand, after 60 seconds recall for shoe and car information are nearly equal.

Second, whenever expert endorsers appear with neutral processing cues, additional time produces little additional recall ($= .28$). However, when product unrelated endorsers appear with neutral cues, extra time leads to significant additional recall ($= .81$).

	20	60	Increase
Expert	2.19	2.47	.28
Unrelated	1.85	2.66	.81

Again, as suggested by H5b, additional time is required whenever subjects are obliged to recall information that is more difficult to associate with other information in the ad. When there is little opportunity to process the ad, inconsistency between the endorser and the message impairs recall. However, when subjects have additional time, inconsistency enhances recall. Apparently, the extra time allows subjects to construct a relationship between the unrelated endorser and the message. This *newly constructed relationship* appears to be more powerful than the *established relationship*.

In sum, although additional processing time generally leads to greater recall, this effect is moderated by the familiarity and dimensionality of the target information. When the product schema is more familiar (car) or the endorser's relationship is more obvious, information can be processed in a relatively short span of time. When the product schema is less familiar (tennis shoe) or the endorser's relationship is unclear, more time is required.

The effect of the endorser's preexisting product relevance: H1 predicted that product-relevant celebrities

would facilitate greater recall of product information than celebrities who have no prior association with the product category. In this study, preexisting product-relevance is operationalized as perceived expertise. The data provide very limited evidence for such an effect. Although expert celebrities do produce higher recall of the product information than nonexpert celebrities (2.27 vs 2.15), the main effect for product-related expertise is not significant. When the car data is considered separately, expertise is marginally superior to nonexpertise (2.39 vs 2.15, $p = .08$). However, this effect must be interpreted in light of a significant expertise x cue interaction ($p = .005$). Compared to other expertise/cue combinations, the "nonexpert endorser/typical user cue" combination produced significantly lower recall (1.44).

H1 can also be tested by analyzing only those conditions that employ neutral processing cues (since neutral processing cues serve as a control). When the shoe data is considered alone, the product-relevant celebrity facilitates marginally higher recall than the nonrelevant celebrity (2.31 vs 1.69, $p = .10$), but only under the 20 second condition.

In short, there is no evidence of a *general* facilitatory effect related to the preexisting product relevance of a celebrity endorser. To the extent that endorser expertise does enhance recall, the effect appears limited by other conditions (processing time, type of embedded cues, product type and/or the endorser).

The overall effect of processing cues: Each ad included words that specified (or failed to specify) whether the celebrity endorser was acting (1) as an expert, (2) as a typical user, or (3) in an unspecified role. H2 predicted that ads which used specific endorser cues (both expert and typical user) would demonstrate higher recall than ads that did not. The data fail to support this hypothesis. In fact, the *nonspecific or neutral cue* is associated with higher recall than either *specific cue*.

	20	60	Overall
Expert	1.90	2.51	2.21
Typical User	1.88	2.38	2.13
Neutral	2.02	2.57	2.30

Although these differences are not significant, their directional consistency suggests that an endorser's role need not be spelled out. Two explanations appear plausible. On one hand, if the information offered by the verbal cue only repeats information implicit in other elements of the ad, then the relational cue may be gratuitous. To the extent that it is redundant, it would serve as a mild distraction. On the other hand, specification could diminish the interpretive role of the subject. That is, when a subject is compelled to infer the endorser's role, processing may be more active and memory could be enhanced. When everything is spelled out by the advertiser, processing may be more passive and recall could be diminished.

In sum, there is no overall effect related to either (1) the endorser's product expertise or (2) the role cues embedded in each ad. Although there was a general effect related to processing time, there was also evidence that "processing time" effects were moderated by other variables. *In short, recall appears to depend not on any of these individual variables but on different combinations of product, endorser, cue and time.* The remainder of this discussion considers various celebrity x

cue combinations and attempts to explain why different combinations produced different recall results.

Expert celebrities with expert cues: H3a predicted that expert cues would enhance information recall for ads involving expert celebrity endorsers. As is clear from the following table, expert cues are never significantly better than neutral cues, and in one case (Evert Lloyd/20 seconds) the combination using expert cues is significantly worse.

	Evert Lloyd		Petty	
	20	60	20	60
Expert	1.63	2.38	2.13	2.63
Neutral	<u>2.31</u>	<u>2.63</u>	<u>2.07</u>	<u>2.31</u>
	-.68	-.25	+.06	+.32
	(p=.07) ns		ns	ns

Why don't expert cues help expert celebrities? Perhaps, the expert cues are unnecessary. Since each expert celebrity's schema contains information about the celebrity's expertise, subjects can infer the celebrity's role (to give expert testimony) as soon as they recognize the celebrity within the context of an ad and long before they encounter additional "expert" role cues provided by the text. If this is the case, the addition of "expert" cues to an expert celebrity is gratuitous. The celebrity's expertise, once recognized, is not enhanced. On the other hand, redundant cues may impede processing. When processing time is limited (20 seconds), redundant information seems to impair recall, but when more time is allowed (60 seconds), this distraction effect is diminished.

This "gratuitous information/distraction" explanation fits the data for Evert Lloyd, but it does not fit the data for Richard Petty. In Petty's case, expert cues are associated with equivalent or slightly higher recall. Why would Evert Lloyd and Petty evidence different patterns? Perhaps the utility of the role cue depends on the power of the endorser's picture of prompt (1) recall of the celebrity schema and (2) inferences regarding his or her role as an endorser. In a pretest, Chris Evert Lloyd's and Richard Petty's *names* were found to be equally familiar to the subject population. On the other hand, it is likely that Chris Evert Lloyd enjoys greater face recognition. Facial recognition was not pretested. To the extent that Chris's picture was more recognized, the "expert" role cues would have been less helpful. To the extent that Petty's face was less familiar, the "expert" role cues would remain useful.

Expert celebrities as typical users: H3b predicted that "typical user" cues would enhance information recall for ads involving expert celebrity endorsers. However, it was also suggested that this facilitory effect might only appear in the 60 second condition. As is clear from the following table, "typical user" cues are never significantly better than "neutral" cues, and in one case (Evert Lloyd/20 seconds) the combination using "typical user" cues is significantly worse. This pattern

	Evert Lloyd		Petty	
	20	60	20	60
Typical User	1.38	2.56	2.38	2.81
Neutral	<u>2.31</u>	<u>2.63</u>	<u>2.07</u>	<u>2.31</u>
	-.93	-.07	+.31	+.50
	(p=.01) ns		ns	ns

is similar to but even stronger than that evidenced by "expert" cues. Could the same explanations apply? That is, could the "typical user" cue be gratuitous for Chris but marginally useful for Richard Petty.

After much consideration, we suggest that the difference stems from the perceived dimensionality of the two expert celebrities. Richard Petty is well-known, but is thought of almost entirely in terms of auto racing. Chris, on the other hand, was the public's sweetheart. The public followed her through adolescence, courtship and marriage; they know her as a person as well as a tennis star. If this is the case, if the average subject's schema for Petty is strictly car- and racing-related (expert), while the average subject's schema for Chris is more multidimensional (expert and normal person), then it is clear why "humanizing" cues (1) can make a positive difference for Petty (no matter the time allowed), (2) have no effect for Chris in the 60 second condition, and (3) have a negative effect for Chris in the 20 second. For Chris, the "typical user" cue is just as gratuitous as the "expert cue," thus there is a negative distraction effect with limited time and a washout with additional time. For Petty, whose celebrity schema is less likely to include a "normal person" dimension, the "typical user" cue produces the humanizing effect looked for in H3b.

Nonexpert celebrity with expert role cues: H4a predicted that "expert" cues would impair information recall for ads involving product unrelated celebrity endorsers. As is clear from the following table, "expert"

	Midler		Herman	
	20	60	20	60
Expert	1.63	2.38	2.19	2.63
Neutral	<u>1.69</u>	<u>2.69</u>	<u>2.00</u>	<u>2.63</u>
	-.06	-.31	+.19	+.00
	ns	ns	ns	ns

cues have no significant effect on recall when combined with product unrelated celebrity endorsers. "Neutral" cues and "expert" cues perform almost the same. Why? The answer may be an "incongruity effect."

First, consider the use of expert cues with Pee Wee or Bette. Subjects are unlikely to accept either one as a product expert. Traits found in each celebrity's schema (unserious and silly) are inconsistent with role traits implied by the expert cues (serious and logical). If this is the case, then subjects perceive a significant mismatch between the celebrity and his/her implied role. In an attempt to resolve this celebrity-role mismatch, the subject might continue to process the ad seeking additional cues to explain how Pee Wee or Bette fit into the ad. When subjects encounter the product information, their incongruity is redoubled. That is, there is also no connection between Pee Wee or Bette and the products they endorse. In short, incongruities exist on two levels: a celebrity-role mismatch and a celebrity-product mismatch. At this point, Berlyne's (1960) collative principle might take hold. The ad becomes a cognitive challenge, a puzzle, and at least for the moment a subject is motivated to examine various parts of the ad in order to find a solution. Even if no solution were found, the additional search could result in higher recall of product information.

Neutral cues could produce a similar but somewhat simpler "incongruity effect." In this case, since the role cues are unspecified, there would be no celebrity-role

mismatch. Nonetheless, subjects would find themselves in a similar situation due to an unresolved celebrity-mismatch. Thus, neutral cues and expert cues would exhibit similar effects when used with Pee Wee and Bette. When no solution is found and there is not sufficient time to construct a solution (20 seconds), recall is very low. When enough time is available to construct a resolution (60 seconds), recall improves significantly.

Nonexpert celebrity with typical user cues. H4b predicted that "typical user" cues would significantly impair recall. As is clear from this table,

	Midler		Herman	
	20	60	20	60
Typical	2.33	2.13	1.44	2.00
Neutral	<u>1.69</u>	<u>2.69</u>	<u>2.00</u>	<u>2.63</u>
	.64	+.56	-.56	-.63
	(p=.09)	ns	ns	(p=.10)

the "typical user" cue produces radically different effects for Pee Wee and Bette. When the "typical user" cue is used with Bette, recall is unusually high for 20 seconds, then falls off slightly at 60. We suspect that this effect is related to the reasonableness of viewing Bette as a "typical user," that is, as someone who in real life is not too unlike the subject. As with Chris Evert Lloyd, the average subject probably has a multidimensional schema for Bette Midler (singer, actress, comedienne, subject of an interview). If this is the case, then the "user" cues provide the subject with a plausible connection between Bette and the tennis shoe. In this case, since there is no significant unresolved incongruity effect, Bette actually works as an endorser, and since resolution is achieved, no additional processing occurs with additional time.

Finally, consider the use of "typical user" cues with Pee Wee Herman. Since Pee Wee is *always in character*, subjects only know Pee Wee as "Pee Wee." By contrast, Bette is occasionally seen out of character. As a result, while it may be plausible for subjects to think of Bette Midler as "someone like myself," it is difficult to think of Pee Wee as "someone like myself." Again, there is a mismatch. However, in this case the mismatch is not between the celebrity and the role nor between the celebrity and the product (which would cause the subject to look for the solution in the ad); instead, *the mismatch is between the celebrity and the subject*. Typical user cues imply that Pee Wee is like the subject and social comparison is required. Even if the subject tries to resolve the mismatch (by comparing Pee Wee to him/herself), then he/she will not attend to the product information. The result may be a distraction effect and diminished recall.

In summary, expert cues consistently failed to enhance the effectiveness of celebrities who were already considered to be experts, and typical user cues improved effectiveness only when (1) the expert celebrity was not already considered multidimensional (expert and normal person) or (2) an irrelevant celebrity is capable of being thought of as normal. Furthermore, the use of irrelevant celebrities (when they produce strong incongruity effects) can be as beneficial as the use of product-relevant celebrities (which produce endorser effects). This pattern is consistent with research concerning the schematic processing of consistent and inconsistent data (see reviews in Alba and Hasher, 1983; Hastie, 1981; and Brewer and Nakamura, 1984).

These findings are limited in several ways: only print ads were employed, the imposition of specific amounts of processing time heightened the unnaturalness of the procedure, and delayed recall was not measured. More importantly, the experimenters failed to anticipate the complexity of the celebrity-role-product interaction. Clearly, certain variables that were not controlled for in this experiment (such as the dimensionality of the celebrity and the presence of role information in the celebrity schema) must be included in future research. On the other hand, the overall results support the decision to explain endorsements within a script- or schema-based theoretical framework.

Future research should explore (1) the effects of a celebrity's perceived dimensionality, (2) the conditions required to produce a beneficial incongruity effect, (3) the relative importance of various sources (text, facial cues, or preexisting schema) in allowing subjects to infer acceptable role schema, (4) the importance of processing time, and (5) generalizability of this model to other media (especially television).

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Learning Context and the Development of Product Category Perceptions

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Abstract

Recent studies of consumer decision making suggest that consumer perceptions of product categories play an important role in brand evaluation. The present research examines the influence of the task context (preference vs. perception) in which category learning takes place on the emergence of category perceptions. We propose that because the task biases the consumer's use of product information the task also biases category perceptions. Thus the learning context is expected to affect subsequent product judgments and preferences.

Introduction

The organization of product knowledge in memory has long been considered a critical factor in consumer decision making. Recent studies have drawn on a variety of organizing principles for consumer knowledge, including schemas, scripts, explicit rules, and categories (Marks and Olson 1981; Sujan 1985; Wright 1986). These structures enable the consumer to create meaningful representations of information that will enable him to simplify, to impose order, and to control his decision processes. In the present study, we focus on product categories as a means by which consumers might structure product knowledge. Sujan (1985) has suggested that the use of such categories enables the consumer to rapidly evaluate a product. Once a novel item is classified as an example of a known category, the affect associated with the category can be associated with it.

A number of studies have begun to examine the use of categorical or schematic knowledge in consumer judgment; however, these studies all assume preexisting category perceptions. The development of consumers' category perceptions through product experience has received much less attention. We wish to begin to explore this issue, under the assumption that consumers learn about product categories through exposure to and experience with specific items or brands in a product class. This category knowledge can then be applied by the consumer in subsequent judgment tasks.

We argue that various environmental factors influence the way consumers encode product information in memory. As a result, a consumer's perceptions of the category, and consequently the brands assigned to that category, are biased. This paper will examine learning goals and the distribution of product features across brands in the category as factors that might vary in the consumer's exposure to a group of products, and which might influence the encoding and retrieval of product class knowledge in memory.

The Structure and Representation of Product Categories

Two different but interrelated frameworks for describing category learning and structure have emerged in recent studies: exemplar models and feature-based models (Estes 1986). Both frameworks adopt two principles of categorization (Rosch 1977): (1) a need for cognitive economy, getting the most valuable information for the least cognitive effort, and (2) a need to assume that the world as perceived is inherently structured -- not just a random collection of attributes.

In exemplar models categorization is accomplished by encoding all specific instances of item occurrence in long term memory. Subsequent category decisions are made by consulting the stored array of exemplars and comparing them to the newly presented item. The item is then assigned to a category on the basis of its similarity to instances of that class (relative to other classes). In contrast, proponents of the feature-based approach to categorization assume that information about specific instances or exemplars is lost. Instead, only information about the relative relations between features is stored for future use. In the present study, dependent measures are taken that are intended to capture the encoding strategy employed by consumers, whether exemplar or feature-based. The information derived from these measures will also provide an opportunity to explore the possibility that different category perceptions are formed depending on the use of different encoding strategies, and whether such use is dictated by the task context.

Studies of categorization have focused primarily on common taxonomic categories, collections of exemplars or featural configurations which are related by some degree of similarity of features. In contrast, recent work by Barsalou (1985) has shown the need for consideration of what he terms "goal-derived" categories or purpose-directed groups of exemplars, such as "things to consider when buying a car," and "what to eat on a diet." Barsalou's research implies that people form category representations differently, depending upon the expected use for the stored information. This means that it is possible to delineate two separate types of memory structures for a product, one based on the consumer's general knowledge of a product class, a "perceptual" category (similar to the common taxonomic category), and another type of representation created in order to make a choice -- a goal-derived category. (For purposes of simplicity and clarity, we will assume that choice is based on preference.)

Barsalou notes that common taxonomic categories can be characterized by the central tendency (median or mode) of the frequency distribution of features or attribute levels over instances. The likelihood that an item is perceived as a member of a category is related to the proximity of its features to these modal values.

This conclusion does not generalize well to goal-derived categories. Members of a goal-derived class may share few features, and items in the category may be complements rather than substitutes for one another. In addition, the goal often dictates searching for extreme rather than typical product features (e.g., zero calories for diet foods rather than average number of calories per serving). The differences in the structure and use of the two types of categories lead Barsalou to conclude that while central tendency predicts the structure of common taxonomic categories, the frequency with which one encounters an object as a member of a category (frequency of instantiation) and the proximity of the object's features to ideal levels play analogous roles in goal-derived categories.

It would appear, then, that one important determinant of the representation of category-level

information in memory is the learning goal. Two such goals -- choice and judgment -- have been considered by Biehal and Chakravarti (1982, 1983). In their view, choice implies a two-step process in which the consumer first compares products in an offered set and then picks one. Judgment refers to the overall evaluative process by which the consumer examines the available information and then organizes it into a category representation.

Logically, it would appear that the consumer will have higher overall retention for items encountered in judgment than in choice, because choosing implies picking one, so that inferior brands can be ignored. This view of the memory processes operating in categorization also implies that the consumer will have higher retention for the items chosen. Consistent with these suppositions, Biehal and Chakravarti (1982) showed that subjects had higher recall for product attribute information in a "directed learning" (judgment) condition. Only for the chosen alternative was recall comparable in the choice condition.

Factors That Influence Encoding and Retrieval

In general terms, the manner in which people process information is determined largely by the amount and type of information available to them, and by the purpose for which the information is to be used. In the present study we focus on learning goal as a determinant of the type of information processing pursued. It is important to note that we are not concerned here with learning motivation, which appears to have little effect on retrieval performance (Craik and Tulving 1975). Rather, the learning goals are expected to affect the types of *processes* that are carried out at encoding. Although motivation may drive these processes, differing retention depends on differing processes, not the motivation itself (Anderson, 1980).

Biehal and Chakravarti (1982) found that subjects processing information to make a choice used primarily attribute-level information, whereas subjects processing to make a judgment stored information by brand. Brand processing seems to operate as a convenient memory heuristic, as it enables consumers to "chunk" information for faster, more complete storage. In contrast, processing information to make a choice requires the consumer to analyze and compare as many facets of the product with others of its class as possible, hence the attribute-level processing. Biehal and Chakravarti focused on brand vs. attribute-based processing strategies, and examined recall of brand/attribute data.

In the present study we are interested in the representation of more general category characteristics, so we will examine perceptions of overall category characteristics as a function of learning goal as well as recall of product information. In addition, we consider two intrinsic properties of the category -- number of exemplars and skewness of the distribution of features over the set of exemplars. We expect that different learning goals will bias the consumer's sensitivity to changes in these objective characteristics.

To summarize, we suggest that preference and perceptual judgment tasks will lead to distinctly different types of category perceptions. Structuring processes, notably encoding and inter-item organization, are influenced by the purpose for which the category information is to be used. Although many of the factors which influence the structuring processes are similar for both types of categories, the degree and manner in which

they are employed may differ depending on the type of category to be formed. This leads to differential storage and consequently differential availability of information.

Experiment

In this experiment the effects of three different learning goals on category structure are examined. The goals are preference, evaluation of inter-brand similarity, and directed learning of the brand data for recall. We suggest that subjects who learn about a category in the context of choosing a preferred alternative will form a different category representation than subjects who learn about the category in the context of similarity evaluation or in anticipation of a recall task. Because in preference subjects focus on better brands and features:

H1a: Preference goal subjects will be able to recall fewer brands than will similarity and directed learning subjects;

H1b: Preference goal subjects will provide poorer estimates of inferior attribute values than similarity and directed learning subjects;

H1c: Preference goal subjects will show more ability to recall and describe an ideal brand than will similarity and directed learning subjects.

The second factor manipulated in this experiment is the skewness of the distribution of presented exemplars. We manipulated the distributions of one feature so that subjects saw either a left-skewed, right-skewed, or symmetric distribution. This was done in order to ascertain the degree to which subjects are sensitive to the objective shape of the distribution, and how the learning goal affects this sensitivity. Flannagan, Fried and Holyoak (1986) have found that people seem to have a prior expectation that these distributions will be unimodal and symmetric. As noted earlier, however, a goal of preference would be expected to bias information search toward superior values. With the manipulation of skew, then, we expect that subjects who learn about a category by assessing similarity or in preparing for a recall task will attempt to organize the presented information as a "normal" distribution, whereas preference goal subjects will utilize a non-normal distribution of "best to worst" ranking without regard to the most frequently occurring levels. Thus,

H2a: Perceptions of the range of attribute levels for preference goal subjects will show less sensitivity to manipulations of skewness than subjects in the similarity and directed learning conditions unless the skewness increases the frequency of brands at the desirable end of the range;

H2b: Subjects in the similarity and directed learning conditions will bias modal estimates toward a perceived "central tendency," the center of the range;

H2c: In general, similarity and directed learning subjects will provide more accurate

estimates of modes and modal frequencies than preference goal subjects.

The final factor considered in the following study is the number of exemplars presented. Two competing effects are expected to operate. First, increasing the number of exemplars should give stronger impressions of the range of attribute values associated with the category. On the other hand, a subject's ability to discriminate exemplars in memory should decline. In view of these competing effects, this factor is treated as exploratory. No formal hypotheses are presented with respect to its interaction with goal and skew in influencing category structure.

Method

One hundred students were paid for participation in the two-part study. Each participant was first exposed to a set of descriptions of microwave ovens. Each description (brand) was given a fictitious name, and was characterized by weight, power, length of warranty and noise level. Subjects were told that all other characteristics of the ovens were the same for all brands.

Brands were presented in sixteen pairs, and this exposure constituted the learning period. The learning goal was manipulated by assigning three different tasks, one per subject, during the learning period. These tasks were:

- 1) to study the brands carefully, learning as much about each brand as possible (the directed learning condition);
- 2) to rate the similarity of each pair of brands on a nine-point scale (the similarity condition); or
- 3) to state their preference for one brand in the pair over the other (the preference condition).

While the number of brand pairs was fixed for all subjects, the number of different brands presented varied. Either 10 or 16 brands were presented. Thus, for the sixteen brands condition, the subject saw each brand twice. In the ten brand condition, all brands were presented at least three times, and two were presented a fourth time.

In addition to the learning task and number of brands presented, the distribution of the brands on the descriptive attributes was manipulated. Each of the four descriptive attributes assumed five levels over the set of brands. Power level varied from 712 to 1502 watts in roughly 200 watt increments. Weight varied for 24 to 91 pounds in roughly 15 pound increments. Noise level varied from very quiet to very noisy, and warranty length from 0 to 24 months in six month increments. For weight, noise level and length of warranty, the distribution of brands of the five attributes was fixed for all subjects. The distribution was symmetric, and from lowest to highest level the frequency of occurrence of each level was 1,2,4,2,1 for the ten brand set and 2,3,6,3,2 for the sixteen brand set. For the power attribute, the same symmetric distributions as before were used for one-third of the subjects. The other subjects saw either a left- or right-skewed distribution. In the left-skew condition, the frequency of occurrence of the five

power levels was 1,1,2,2,4 or 2,2,3,3,6. In the right-skew condition the frequencies were reversed.

Following the learning period, an unrelated distraction task was assigned. Then, subjects were asked a series of questions about their perceptions and preferences regarding the brands of microwave ovens they had seen previously. Subjects were asked first to list all brand names they could recall. Next, they were asked to specify the highest and lowest levels of the four attributes that had appeared in any of the product descriptions. These data also allowed us to assess perceptions of range, calculated as the difference between the maximum and minimum attribute levels. Subjects then specified the modal value of each of the four features (the value that appeared most frequently), and provided an estimate of the perceived frequency of its appearance. Finally, subjects were asked to name their ideal brand, and to list the attributes of that brand.

Results

Our first hypothesis, that subjects will form different category representations depending on their learning goal, was examined through brand recall, perception of range and modal values, and recall of an ideal brand. First, the number of actual brand names recalled from the learning period was calculated. An analysis of variance on correct brand name recall with number, skew and goal as factors was performed. The main effect of goal was significant ($F_{2,83}=17.23$, $p<.01$), with preference goal subjects producing the greatest number of correct responses and similarity goal subjects the fewest. There is also a significant interaction of goal and skew for correct brand responses ($F_{4,83}=2.86$, $p<.05$). Recall for preference improves as the frequency of more desirable product descriptions (higher power) increase. No other effects or interactions were significant.

Table 1
Mean Number of Brands Correctly Recalled

Learning Goal	Direction of Skew		
	Right Skew	Sym-metric	Left Skew
Directed	4.25	1.91	2.45
Similarity	0.83	0.45	1.30
Preference	2.72	3.36	3.09

These results support the hypothesis that learning goal affects the structure of the category being formed, as preference subjects appear to be more concerned with remembering and organizing the more highly desirable items. These results also suggest that similarity subjects are occupied with attribute-based comparisons of similarity, and, contrary to expectation, are unable to simultaneously process and encode attribute information and brand names.

An analysis of variance with number, skew and goal as factors on the numbers of incorrect brand names listed (names that had not been presented during the learning period) is consistent with the previous results. The effect of goal is significant ($F_{2,83}=4.95$, $p<.01$); preference subjects list, overall, the fewest number of wrong brand names. Similarity subjects have almost equal amounts of correct and incorrect names, which indicates that are unable to discriminate between what

they feel are correct and what are actually incorrect product names.

An effect of skew that approaches significance for incorrect responses ($F_{2,83}=2.57$, $p<.10$) indicates that the number of incorrect responses generated increases as the skew increases the number of desirable brands. This suggests the possibility that, regardless of the learning goal, subjects generally anchor on the more desirable items, at least with regard to products. No other effects were significant.

Table 2
Mean Number of Brands Incorrectly Recalled

By Goal	By Skew	
Directed	1.54	Right 0.80
Similarity	0.90	Symmetric 1.05
Preference	0.75	Left 1.40

With respect to category characteristics, we expected that preference would focus attention away from inferior levels, but not from superior ones. For the three interval level attributes -- power, weight, and warranty length, we examined the difference between the reported minimum value and the actual value. An analysis of variance with number, skew and goal as factors for minimum weight resulted in a significant effect of goal ($F_{2,72}=2.97$, $p<.05$). Preference subjects were less accurate, as predicted, but so were similarity subjects. However, there was evidence of confusion on the part of the subjects as to whether greater weight in a microwave oven was more desirable than less weight.

Results for minimum warranty provide stronger support for H1b. An ANOVA with all factors found a significant interaction of number and goal ($F_{2,71}=3.70$, $p<.05$). This result indicates that preference subjects were less able to accurately recall the minimum warranty period than either directed or similarity goal subjects in the ten brand condition. The presentation of additional exemplars in the sixteen brand condition appears to aid recall of these category characteristics for similarity and preference goal subjects while detrimentally affecting directed learning goal subjects. The same pattern obtains for power, but because the analysis involves the manipulation of skew for this attribute, the analysis is reported below. Thus, the differing abilities of subjects to accurately recall minimum attribute values appears to be determined by the learning goal, which affects the type of information encoded, hence influencing the type of category representation formed.

Subjects were also asked to state an ideal brand: the one brand of all those presented that they would most like to own. If the subject provided a brand name that had been presented, it was counted as a correct response. Partial names and not-presented names were considered incorrect. The frequency of correct versus incorrect responses was examined as a function of learning goal. As expected, the frequency of correct responses was higher for preference subjects than for similarity goal subjects, but it was unexpectedly higher for directed learning subjects as well ($\chi^2=17.9$, $p<.001$). Again, we conclude that the learning goal manipulation leads preference subjects to form category representations that focus more on the desirable items than subjects who evaluate similarity.

Our second hypothesis concerns the effects that differences in skewness of groups of exemplars would have on subjects' tendencies to organize product information into normal or non-normal distributions. We looked at estimates of mode, modal frequency and range values to assess sensitivity to skew as a function of learning goal.

Subjects' perceptions of the modal value for power provided a manipulation check for skew. An ANOVA for all possible effects and interactions of number, skew, and goal revealed a significant effect of skew ($F_{2,73}=6.97$, $p<.001$). As expected, subjects are affected by skew and in general are oversensitive, so that subjects presented with normally distributed sets are best able to state the mode, while right-skew subjects (numerous undesirable brands) underestimate it, and left-skew subjects (numerous desirable brands) overestimate it.

Skew was expected to influence perceptions of extreme values in the category, as measured by the reported minimum and maximum attribute levels and the implied range calculated from these values. For power, an ANOVA by number, skew and goal finds only an effect of skew on the range between lowest and highest possible power levels ($F_{2,83}=7.30$, $p<.001$), such that subjects in the right-skew condition were most nearly able to accurately recall the range of presented power levels. Subjects in the left-skew condition gave inflated range estimates, while subjects in the symmetric condition underestimated the range.

One possible explanation for these results is that subjects have two natural reference points for considering category information: the mean and the best end. However, the low (worst) end is salient only in the right-skew condition when the frequency of brands at that end is high. Subjects in the left-skew condition, anchoring on the best levels, have hazy perceptions of the lower levels, seeing them as very undesirable and as a result, very far away. This leads to inflated estimates of range. This interpretation is further supported by a multivariate analysis of variance performed on the estimates of maximum and minimum power levels with number, skew and goal as factors, in which the effect of skew was significant ($F_{4,138}=3.71$, $P<.01$). For the maximum levels reported, the accuracy of perception follows the skew: accuracy improves as the modal value improves. For the minimum level, subjects in the normally distributed condition are best able to state the correct value. Right-skew condition subjects, faced with an abundance of less desirable items, have a pessimistic view of the minimum and maximum, recalling both as lower than they actually were. Left-skew condition subjects, also focusing on the more desirable levels, have a less accurate perception of the low end, seeing it as very different, and hence underestimating it.

One further finding supportive of this biased focus can be seen in the modal values reported for weight, an attribute for which skew was not manipulated. Subjects appeared to "halo" off power, so that weight showed effects of skew. Specifically, for the right-skew distribution accuracy of reported mode improved as number of exemplars increased, but for the left-skew and symmetric conditions the accuracy of perception decreased as number increased. Also, as in the case of minimum power estimates, subjects exhibited a tendency to assign conservative estimates of mode in the left-skew condition for weight and to some extent for noise ($p<.10$). An analysis of variance was also performed on subjects' estimates of the frequencies with which the

mode occurred, again with number, skew and goal as factors. For weight, a significant effect of number by skew $F_{2,79}=3.98, p<.05$ supports the preceding findings of conservatism and haloing.

As mentioned earlier, we included the manipulation of the number of presented exemplars to observe the effects of the amount of information to be learned. In the MANOVA on maximum and minimum estimates of power, the number by goal interaction was significant ($F_{4,138}=2.40, p<.05$). It appears that the accuracy of perception improves for similarity and preference goal subjects as the number of presented exemplars increases, but that the opposite is true for directed goal subjects. These results indicate that subjects who learn the product information without a well-defined goal or strategy, such as the directed learning subjects, are at a disadvantage as the number of exemplars increases; they become overloaded with unorganized information.

Table 3
Mean Reported Power Maxima and Minima

Goal	Maximum	
	No. of Exemplars	
	10	16
Directed	1374.42	1219.36
Similarity	1410.45	1531.63
Preference	1369.19	1495.49

Goal	Minimum	
	No. of Exemplars	
	10	16
Directed	644.28	557.01
Similarity	556.08	709.88
Preference	662.11	668.78

(Actual maximum = 1502;
actual minimum = 712.)

The idea of information overload is supported by a MANOVA on perceptions of modal levels for power, weight and noise, with number, skew and goal as factors. The effect of skew was significant ($F_{4,144}=3.39, p<.01$) as was the effect of the number and goal interaction ($F_{4,144}=2.61, p<.05$). As the number of presented exemplars increases, the accuracy of similarity goal subjects decreases, and the accuracy of preference goal subjects increases.

Table 4
Mean Perceptions of Modal Power Level

Learning Goal	Number of Exemplars	
	10	16
Directed	1077.25	1060.35
Similarity	1146.61	981.61
Preference	1057.10	1105.96

(Actual modal value = 1116.)

Discussion

We have seen that learning goal and skew separately and jointly have implications for the organization and completeness of encoded product

information. In general, it appears that directed learning subjects, without a strategy for learning, opt for a sketchy perusal of attributes, placing greater emphasis on a brand-based organization. Similarity goal subjects take the opposite tack; they focus primarily on attributes, showing little inclination or ability to link the attributes as features of a particular brand. As a result, they are less prone to exhibit haloing, as they consider each attribute separately.

Thus, in processing product information by attributes, subjects construct categories that include more complete range information, including more accurate perceptions of maxima and minima. At the same time, it does not appear that similarity subjects distill summary representations, such as preferred brands, from the attribute-level information.

Falling into the continuum of brand-to-attribute processing are the preference goal subjects. Although they are cognizant of the importance of the manipulated attribute, power, they do not rely upon attributes as the basis for category structuring. Instead, they appear to use the attribute information to make a preference judgment at the moment of comparison and then encode the preferred brand into the category. While this method does enable them to isolate one ideal brand, it also hinders their ability to recall its relative merits by attribute.

Preference goal subjects create categories that are designed to serve one purpose: to make the optimal choice. As such, the recall of lower range values is poor; these values were presumably eliminated as unimportant because they were undesirable. In addition, the recall of other attributes is distorted due to the tendency of preference goal subjects to halo off the most important attribute. This suggests that they do not attend to all attributes equally, even at the time of initial presentation and encoding. Instead, they opt for a heuristic approach of relying heavily on the most important attribute.

The amount of information to be learned also interacts with skew and goal to affect category perceptions. When category perceptions were strong, increased numbers of exemplars may improve accuracy of category perceptions. The cost is increasing confusion regarding the particular brands. In the absence of strong category-level perceptions, increasing the number of exemplars only served to confuse perceptions of category characteristics.

Several limitations and suggestions for future research should be noted. First, this study was confined to the initial phase of category perception formation. One direction in which to extend the results of this study would be to examine the influence of extant structures on future category decisions. While the directed learning subjects in this study appeared to focus on brands, they developed weak category perceptions. Thus, it seems that brand-oriented processing need not be linked to the use of category-level information. Examining the effects of these differing structures might help to delineate the roles of brand and category data.

In addition, an exploration of the effects of order of presentation and amount of inter-item variance of exemplars in category learning is suggested by the work of Elio and Anderson (1984). This extension would necessitate the inclusion of a transfer phase (in which novel instances are presented for consideration as members of the category) to examine the effect of order and variance on the "confirming" sets of exemplars.

Conclusion

It has been proposed that category perceptions influence consumer decision processes. The current study begins to investigate the prior question of how category perceptions arise in the first place. Specifically, we have demonstrated that global category perceptions are prone to numerous biases as a function of the learning environment. An examination of these biases not only provides insight on how consumers deal with novel product information, but also suggests ways in which product category perceptions might be invoked in decision processes.

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A Probabilistic Functional Approach to Analyzing Individual Evaluation of Compiled Nutrition Information

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Abstract

This research examines variation in consumer use of nutrient cues for 40 brands of dry cereal in forming a summary nutritional evaluation of each brand.

Brunswik's lens model technique is used to analyze probabilistic linear and non-linear cue utilization on a subject by subject basis. Results reveal considerable between subject variation in cue use as well as inverse use of negative nutrient cues. The extent of between subject variation challenges previous assumptions of homogeneity of cue usage in cross sectional studies.

Introduction

Every person's concern with physical health and wellbeing involves consideration of their diet composition, based upon evaluation of the nutritional content of the foods which they consume. Such evaluation is facilitated by the availability of nutritional information which reveals the nutrient content of various food groups. This study examines the variation in the use of one type of nutritional data for one specific type of food, breakfast cereals.

Breakfast cereals were chosen because there is a great amount of variation across brands in nutritional content and a large variety of brands are available. Nutritional value was found to be one of four attributes of cereal most frequently mentioned by subjects in choosing which brand to purchase (Gatignon, 1984). Nutrition has been shown to effect purchase change as well as have no effect on purchase depending upon the type of nutritional information available. (see Russo, et.al., 1986 for an excellent review)

The following section briefly discusses the background for consumer's evaluation of nutritional information. A probabilistic functional approach is used to structure the analysis of variation in consumer use of nutrient cues. The purpose of this study is to compare the variation across individuals in the use of nutrition information with that of an "expert" source.

Information Availability and Provided Formats

Food processors and packagers are required by law to print the ingredients of a product on the package. This information includes the food (e.g. beef, pork), coloring, (e.g. red dye No. 7), chemical, (e.g., sodium nitrate, preservatives), and additive, (e.g., salt, vinegar) content, but only about half of all packaged products include the nutrient content (e.g., proteins, carbohydrates) (*Consumer Reports*, March 1986). One product which does include nutrient information on the label is dry breakfast cereals. Consumer concern with the nutrient content of cereals makes this type of information promotionally appealing.

The costs of collecting, computing, and comprehending sufficient nutrition information by examining each cereal box on a supermarket shelf is prohibitively high to most consumers. Few consumers actually acquire such information (Jacoby, Chestnut and Silberman, 1977). To reduce these costs to an acceptable level, Russo, et.al. (1986) provided consumers with an

information display board placed near cereal shelves in supermarkets. Four formats were used: matrix; summary; intermediate; and, complete. While useful in their experimental setting, such information formats are usually not available to consumers in supermarket displays. What is available is similarly formatted information in generally circulated publications.

For purposes of our study, we chose to use the information available in a recent issue of *Consumer Reports* (October 1986). *Consumer Reports* product evaluations have been influential in significantly altering sales and have been the subject of legislation concerning advertising use of its product evaluation techniques (*Consumer Reports*, November 1986). The information is typically provided in the complete format. That is, cereal nutrient content by brand is provided in a matrix format which includes a summary rating of overall nutritional value for each brand calculated from the nutrient data in the matrix.

The inclusion of a summary measure in the complete format provides an interval scaled basis for the rank ordering of brands. It raises the question as to how consumers actually use such information in brand comparisons and decisions. To simply accept the summary measure as a basis of personal evaluation implies that the consumer agrees with the weighting and combinatorial mathematics which *Consumer Reports* employs in deriving the summary measure, regardless of each consumer's own needs, preferences, or opinions.

In a recent study, fifty-four percent of consumers using a German equivalent of *Consumer Reports* were found to rely on summary measures in the purchase of nondurables, while only eleven percent used the individual attribute (e.g. nutrient) ratings in the adjoining matrix (Silberer, 1985). Such use of summary measures subjugates consumers to the combinatorial mathematics, linear or configural, utilized by the publication in creating the overall summary measures. This willingness on the part of consumers to rely on summary measures likely reflects a cost versus benefit analysis of information acquisition rather than a true indication of each consumers importance weight with respect to each attribute. It also may reflect the credibility which the publication has earned in the mind of the consumer.

The nutrient information provided by *Consumer Reports* includes five nutrients from which the summary rating is computed for each brand. Vitamin and mineral content is not included. Russo, et.al. (1986) found that positive nutrient information such as vitamins and minerals had no effect on brand purchases, but that "negative" nutrient (sugar) information did affect brand purchase patterns. The *Consumer Reports* (October 1986) nutrient information contains 2 positive (fiber and protein) and 3 negative (sugar, sodium, and fat) nutrients.

Russo, et.al (1986) argue that summary measures should not contain negative nutrient information because there is no standard (e.g., R.D.A.) level for negative nutrients across any mix of consumers. This does not, however, reduce the meaningfulness of the *Consumer Reports* summary data which depends in part on negative

nutrient cues. What is of concern is the relative weight given to each nutrient, negative or positive. In terms of persuasive effects, perceptions of relative brand nutritional levels may have greater influence on purchase decisions than brand levels relative to an externally imposed standard.

Examination of dry cereal boxes revealed display of 2 sections of nutrition information. One contained the most of five nutrients cited here, while the other included the remainder of the five plus vitamins and minerals. *Consumer Reports* acknowledges that individuals may want to consider vitamins and minerals, but that they're not included in their summary measure because most dry "cereals" are fortified with vitamins and most people get sufficient daily vitamins in the other foods they consume every day. Except for a few cereal brands which actively promote 100% U.S. RDA vitamin and mineral content (e.g., Total, Product 19) most contain between one-fourth and one-third of the required daily U.S. RDA levels. The purpose of this research is not to argue the issue of which nutrient information should be displayed in a publication, but rather to compare individual use of nutrient cues which are published with that of an external, "expert" source. The question involves the efficiency of information markets based on availability of an influential complete format of nutritional quality of brands and acceptability of overall summary ratings by consumers.

Conceivably a person who examines a "complete" format display of brand ratings could learn the algorithm used by the information provider (e.g., *Consumer Reports*). This study does not propose to test the learning effect, but rather is concerned with the ability of consumers to achieve comparable brand ratings by using their own self-styled method of evaluation. This achievement can then be decomposed to provide an evaluation of the tendency of individuals to match the algorithmic formulation of external sources of summary rating scales. The following section describes the lens model methodology employed to test the variation in use of a matrix format of nutrient information across subjects.

Technique of Analysis: Lens Model

Brunswik's Lens Model technique (Brunswik, 1955; Hursch, Hammond, and Hursch, 1964; Castellan, 1972, 1973) was employed to analyze the data. This technique has been infrequently applied to marketing problems (Davis and Plas, 1983; Holbrook, 1981; Woodside and Taylor, 1986). Objective measures of ecological variables are often difficult to obtain in marketing studies. Tapp (1984) contends that a measure of post-purchase satisfaction cannot be obtained objectively to validate consumer inference in a probabilistically functional context when satisfaction is basically a subjective response. However, indirect indicators of satisfaction can be obtained through objective measures.

In the case of dry breakfast cereals, it is doubtful that anyone would personally analyze the nutritional content. An image of a brand derived from objective product information and/or promotional campaigns may be all most people need to achieve an acceptable level of brand satisfaction, taste and other factors notwithstanding. In the context of this study, *Consumer Reports* use of nutrient levels to construct the CR summary measure of nutritional value by brand provides the needed objectively measurable ecological variable.

The *Consumer Reports* (CR) measure is obtained by their expert (but subjective) weighting of objective nutritional content measures. The subjectivity is observable in the regression coefficients of the objective nutritional variables (e.g., protein content) on the ecological side of the model. By publishing summary nutrition values for each cereal, CR is creating an ecological standard by which many consumers will evaluate cereal in purchase decisions. A public policy issue is raised with regard to the claim that their summary measure is valid for a majority of consumers who base their purchase decisions upon it. It thus becomes an objective criterion for many consumers, but not necessarily ecologically valid. Our use of the lens model is testing the ecological validity of the CR summary measure for the average consumer. This, of course, assumes the average consumer has sufficient knowledge of the nutritional components presented here to validly form his/her personal summary criterion measure. An extension would involve replicating this study on a group of "nutritional experts". In this sense then, achievement is a misnomer somewhat in that it is used more to evaluate the ecological validity than to measure the learning sense of achievement.

The formulation of this study in the Lens Model context is diagrammed below in Figure 1. In this formulation, the B_E are estimated using OLS with the nutrient cues acting as the independent variables and Y_E , *Consumer Reports* nutritional value, as the dependent variable. Similarly, the B_S 's are estimated with OLS with Y_S as the dependent variable. Thus, a distinct set of B_S 's as well as scores for achievement (r_a) and matching (r_m) will be estimated for each subject. Achievement scores provide a measure of the efficiency of the matrix format of nutrient cues in the marketing of brand by brand information. Matching is simply a measure of each subjects ability or tendency to conform to the linear use of cues by a sole expert source.

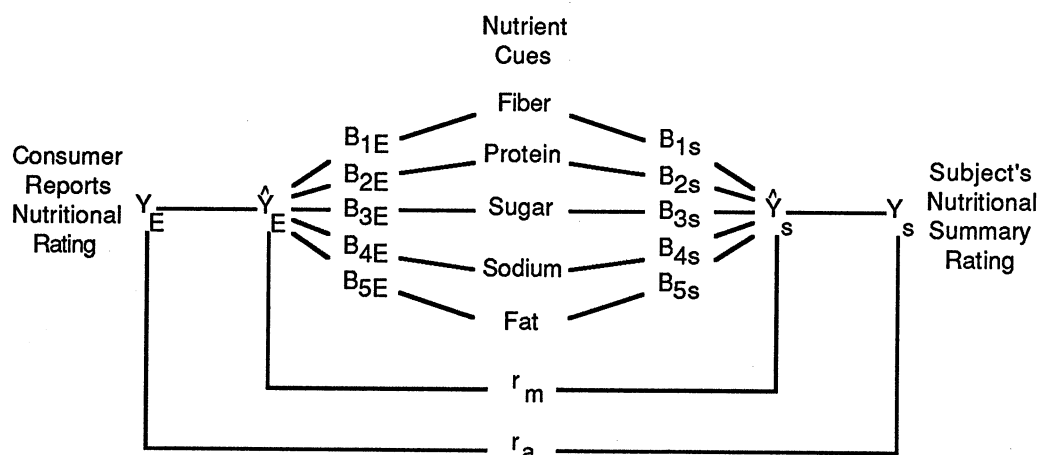
Each subject views the nutrient cues stochastically, with the distribution of B_S representing the within subject variation. Each subject's ability to utilize the nutrient cues in the same way as *Consumer Reports* can be measured by r_m , the level of matching. r_m is the simple correlation between Y_E and Y_S and is a measure of the correspondence between respective B-weights for each cue (Castellan, 1973). The achievement of each subject in estimating the "true" nutritional value of each brand (Y_E 's) is the simple correlation, r_a , between Y_E and Y_S for the 40 brands. (Castellan, 1973).

Because the estimates of the parameters assumes linearity, the correlation of the residual variances can be used to estimate the proportion of non-linearity or configularity which each subject is able to discern from the ecological non-linear usage of cues. The level of achievement, r_a , can be decomposed into linear and non-linear components in the following manner (Castellan, 1973):

$$r_a = r_m R_E R_S + C \sqrt{(1-R_E^2)(1-R_S^2)} \quad (1)$$

The first term $r_m R_E R_S$ represents the portion of achievement which derives from linear matching. The second term $C \sqrt{(1-R_E^2)(1-R_S^2)}$ represents the portion of the achievement score which derives from non-linear (or configural) matching.

Figure 1
Nutritional Lens Model



Method

Subjects

Students in a graduate business program at a large Eastern University voluntarily participated as subjects in the experiment. Half the students were from foreign countries, most of whom were relatively unfamiliar with cereal brand names. The other half were American students who were familiar with many brand names. Nationality should therefore be able to be used to manipulate brand name familiarity. Because cereal brand names may influence a person's perception of the nutritional value of that brand, a stronger manipulation can be achieved. One half of the subjects were randomly assigned to a brand-name-available condition while the other half received no brand-name cue in their instrument, regardless of nationality. Domestic subjects in the brand name available condition should be most affected in nutrition appraisal.

Students were selected from an MBA class to increase the likelihood of higher motivation than undergraduates. In addition, partial course credit was given for performance of this task. Two products were used of which cereals were one. Students took between 20 and 45 minutes to complete the task, depending upon which conditions they were assigned. Because there were 40 brands with five nutrients each, it is highly likely that no subject used all 5 nutrient cues. Because the purpose of the study is to evaluate the ecological validity of highly influential published product information, it is hoped that subjects will only use those nutrients which are critical to their nutritional well being in evaluating the various brands. Students performing this task expressed a desire to be able to program this information to make brand by brand nutritional evaluation.

Instrument

The matrix format excluding the *Consumer Reports* (CR) summary measure was used to provide nutritional information by brand. The names of the five nutritional components with the units for each (e.g. grams of sugar per one ounce serving) were listed at the top of the vectors of nutrient cue values for each brand. The five nutrients were fiber, protein, sugar, sodium, and fat. Fiber and protein were considered to be positive

nutrients while sugar, sodium, and fat are negative nutrients (c.f. Russo, et.al., 1986). Therefore, increasing amounts of protein and fiber should result in higher nutritional values; increasing amounts of sodium, sugar, and fat, on the other hand, should lead to lower nutritional values.

The cover sheet of the survey instrument contained the professional reference manipulation. As with brand names, this was a between subjects condition. Subjects were placed randomly in one of three groups: (1) No professional reference made; (2) A sentence stating that the nutrient/attribute ratings were from an "independent professional" organization; or, (3) the same sentence as in (2) but with "*Consumer Reports*" substituted for "independent professional" organization.

Procedure

In the column to the right of the nutrient scores for the 40 brands of cereal used, subjects were instructed to write a value from 000 to 100 to indicate their perception of the overall nutritional value of each brand, where 000 represented the lowest possible nutritional value and 100 the highest possible nutritional value. The same nutritional scale was used by *Consumer Reports* to report the CR summary measure of dry cereal nutritional value to readers for each brand.

After completing this task, subjects were instructed to rate the importance of each of the five nutrients in evaluating the nutritional value of each brand. This rating was done on a seven-point scale anchored by not-at-all important (=1) to very important (=7). Finally subjects were instructed to complete items which indicated their prior behavioral response (purchase, use) to various brands of cereal, as well as selected demographic classification items.

Results

A separate lens model analysis was run for each subject. Patterns of cue utilization varied considerably. No subjects weighed cues in exactly the same mathematical pattern as *Consumer Reports*, though a few were close. Most subjects tended to use one or two cues while virtually ignoring others. A probability = .05 was required for the coefficients of cues to be statistically

different from zero. Any coefficient with a probability(t) > .05 was converted to zero for use in cluster analysis..

The benchmark for ecological matching, is given by the following relationship:

$$Y_E = 62.3 + 1.63(\text{FIBER}) + 2.15(\text{PROTEIN}) - 0.06(\text{SODIUM}) - 1.69(\text{FAT}) - 2.28(\text{SUGAR}) \quad (2)$$

(p<) (.0001) (.0001) (.0001) (.0001) (.0001)

Equation (2) represents the relationship between the summary measures provided by *Consumer Reports* and the five nutrient cues on which the summary ratings were based.

To assess the patterns of cue use among subjects and render the results more understandable, a cluster analysis was run. The clusters can be considered to be benefit segments. Subjects tended to significantly use

only two or three of the five cues in making evaluations. Subjects who exhibited the highest level of achievement tended to cluster in a group which used fiber, sugar, and sodium to evaluate the brands. All high achievers utilized a combination which included at least one positive and one negative nutrient. High achievers also tended to be high on linear matching. This may have resulted in the relatively low level of configural cue usage by *Consumer Reports*. Nearly all achievement, high or low, resulted from matching linear rather than nonlinear ecological cue usage by subjects. High achievers tended to be American students who were not overly concerned with any one nutrient, but rather attempted to objectively evaluate brands using data at hand.

Table 1 shows the results of the Cluster Analysis. Observation 34 contains the nutrient cue coefficients

Table 1
Cluster Analysis of Nutrient Cue Coefficients

OBS	FIBER	PROTEIN	SUGAR	SODIUM	FAT	ACHIEVE-	LINEAR	NONLINEAR	CLUSTER
						MENT	MATCH	MATCH	
1	1.60	0.00	0.00	0.000	0.00	0.565	0.548	0.017	1
2	2.21	0.00	0.00	-0.090	0.00	0.590	0.595	-0.005	1
3	1.79	0.00	0.00	0.000	0.00	0.646	0.637	0.009	1
4	0.38	0.00	0.00	-0.070	-0.85	0.485	0.491	-0.005	1
5	0.00	0.00	-1.18	-0.050	0.00	0.680	0.657	0.023	1
6	1.69	0.00	0.00	0.000	0.00	0.390	0.413	-0.015	1
7	0.00	0.00	0.00	0.000	0.00	0.398	0.413	-0.015	1
8	0.00	0.00	-0.78	-0.060	0.00	0.513	0.528	-0.015	1
9	1.08	0.00	0.00	0.000	0.00	0.464	0.471	-0.007	1
10	0.00	0.00	0.00	-0.140	0.00	0.512	0.467	0.045	1
11	0.00	0.00	0.00	0.060	0.00	0.242	-0.259	0.017	1
12	0.00	0.00	0.00	0.040	0.00	0.103	0.113	-0.010	1
13	0.00	0.00	1.07	0.040	0.00	0.145	-0.127	-0.018	1
14	0.00	0.00	1.50	0.000	0.00	0.070	0.491	0.000	1
15	0.00	0.00	0.00	0.226	0.00	0.235	-0.213	-0.023	1
16	0.59	1.39	0.00	0.000	0.00	0.446	0.443	0.003	1
17	0.61	0.23	0.00	-0.030	0.00	0.606	0.630	-0.025	1
18	0.00	1.99	-0.46	0.000	0.00	0.600	0.614	-0.014	1
20	0.00	4.24	0.40	-0.010	1.19	0.208	0.234	-0.027	2
21	1.30	0.00	-0.92	-0.050	-2.44	0.823	0.802	0.021	3
22	1.43	0.00	0.00	0.000	-2.25	0.487	0.490	-0.003	3
23	0.00	0.00	0.00	0.060	-4.25	0.126	-0.114	-0.012	3
24	0.00	0.00	0.00	0.060	-4.26	0.126	-0.115	-0.008	3
25	1.54	0.00	-0.71	-0.020	-2.70	0.708	0.701	0.007	3
26	3.07	0.00	0.00	-0.070	0.00	0.690	0.688	0.002	4
27	2.94	1.28	-2.79	0.000	0.00	0.753	0.572	0.021	4
28	2.68	0.00	0.00	-0.230	0.00	0.552	0.556	-0.004	4
29	2.65	0.00	-1.81	-0.100	0.00	0.806	0.785	0.021	4
30	3.24	0.00	-2.70	-0.120	0.00	0.853	0.844	0.009	4
31	0.58	0.00	-1.83	-0.010	-0.83	0.786	0.813	-0.027	4
32	2.55	0.00	-1.37	0.000	0.00	0.765	0.770	-0.005	4
33	2.47	0.00	-1.97	-0.090	0.00	0.776	0.754	0.022	4
34	1.63	2.15	-2.28	-0.060	-1.69	1.000	0.969	0.031	4
35	0.00	0.00	0.00	-0.100	-8.48	0.267	0.302	-0.035	5
36	0.00	0.00	0.00	-0.100	-8.31	0.267	0.297	-0.030	5
37	4.09	0.00	-1.44	0.000	-4.93	0.696	0.708	-0.012	6
38	1.63	6.68	0.00	0.000	0.00	0.603	0.600	0.002	7
39	3.82	7.93	0.00	0.000	0.00	0.533	0.539	-0.006	7
40	0.00	6.95	0.00	0.000	0.00	0.340	0.347	-0.008	7
41	1.68	6.53	-1.29	0.000	-2.27	0.792	0.779	0.013	7

obtained by regressing the CR summary rating on the values of the nutrient cues across the 40 brands of cereal. This represents the ecological (left) side of the lens model in Figure 1. Each of the remaining observations represent the coefficients obtained by regressing each subject's summary evaluation on the nutrient cues across the 40 brands of cereals.

The analysis indicates that non-subjects used all cues with precisely the same weighting structure as CR. In fact, most subjects used only a subset of cues, yet many attained high achievement scores. One reason for this may be a high level of cue intercorrelation, i.e., redundancy in relative ranking of pairs of cues across brands. Table 2 below shows the correlation matrix for the five nutrient cues used in this experiment. This matrix shows that redundancy occurs between fiber and sodium, protein and sodium and fat and sugar. All three pairs are negatively correlated ($p < .05$). These negative correlations indicate that, to some degree, a person could use one of each pair of cues and still attain a reasonable level of achievement (r_a).

The seven resulting clusters represent similar patterns of cue usage by subjects within each cluster. Cluster 1 subjects show no pronounced use of any set of cues. Observations 11 through 15 are foreign students who used negative nutrients in an algebraically inverse way than *Consumer Reports*. Cluster 2 and 7 subjects placed a heavy emphasis on protein. The Cluster 2 subject was a foreign student who used the fat cue inversely. Cluster 3 subjects primarily emphasized fat content. Cluster 4 subjects heavily emphasized fiber and sugar content. Cluster 5 subjects emphasized fat and sodium content. Cluster 6 subjects emphasized a combination of fiber, sugar, and fat.

Subjects who exhibited the highest levels of nonlinear cue matching tended to use only negative nutrients linearly. Negative nutrient cue usage has been found to be more important in brand evaluations and purchase decisions (Russo, et.al., 1986). However, in this study, achievement was usually lowered by failure to consider positive nutrients in a linear function.

Subjects who exhibited the lowest levels of achievement evaluated at least one negative nutrient inversely. They tended to be foreign students who perceived fat, sugar, and sodium as being positively related to nutritional value. They came from countries as diverse in culture as India, Germany, and Taiwan and were among the best and more conscientious students. Likelihood of arbitrary responses was therefore extremely low.

Conclusion and Discussion

Results presented above provide an approach to analyzing consumer response to the availability of nutrient cues in a matrix information format. Utilizing the probabilistic functional approach to cue evaluation, the lens model technique was applied in an information market context to nutrient cue processing by potential cereal consumers. The focus was on the micro issue of variation in consumer use of nutrient cues. Results indicate that assumptions of homogeneity of cue utilization in cross sectional studies is of questionable validity. Failure to observe aggregate cue usage effects in cross sectional studies may occur when effects exist at a more disaggregate level.

Table 2
Nutrient Cue Correlation Matrix

	A1	A2	A3	A4	A5
A1	1.000 0.000				
A2	0.241 0.134	1.000 0.000			
A3	-0.319 0.045	-0.455 0.003	1.000 0.000		
A4	0.048 0.769	-0.009 0.956	0.029 0.861	1.000 0.000	
A5	-0.190 0.241	0.147 0.366	0.137 0.401	-0.441 0.004	1.000 0.000

Cluster analysis revealed patterns of cue usage which may be construed as nutritional benefit segments in the market for dry cereals. Even within the clusters, variation in cue coefficients existed. This variation supports the probabilistic functional theory of cue use by individuals (Brunswick, 1955).

The importance of positive nutrient cues in attaining high achievement scores raises doubts about the contention by Russo, et.al. (1986) that positive nutrients do not affect purchase decisions. In the Russo, et.al study, positive nutrients values for fiber and protein were not available to subjects in the display boards. Only the positive nutrients values for vitamins and mineral, which *Consumer Reports* contends do not significantly discriminate among brands, were available. Russo, et.al. results support this *Consumer Reports* contention. Though we did not measure purchase response, results indicate that evaluation of overall nutritional quality of brand is as sensitive to positive as to negative nutrient cues.

Increasing use of brand matrix and summary formatted information is being made possible through electronic as well as print media. The development of high-powered personal computers, communication devices, and artificial intelligence software make it possible for consumers to design their own algorithm to compute summary nutritional values from either self-collected (e.g. from cereal boxes) or pre-collected (e.g. *Consumer Reports*) data sources. Individuals can potentially generate their own matrices and summaries of brand-nutrient information to be built into an overall nutrient/conditioning program.

Additional studies are needed which examine both other product classes as well as other more complex configurations of potential cue usage. This research provides one potential application of the lens model in the marketing literature to the problems inherent in information markets. Difficulties inherent in finding objective measures of subjective consumer responses such as satisfaction (Tapp, 1984) can be remedied more readily in information markets. Rapid increases in the number of published summary measures of brand attributes provide a rich array of application possibilities.

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The Role of Specific-Item Causal Dispersion in Attributional Focus and Confidence Determination

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Abstract

Two of the most important determinations in an attribution research setting are those of the attributional focus and attributional confidence. However, for two different reasons, assessing these two constructs has presented problems to researchers. Problems regarding assessment of the former involve both conceptual and operational problems, while problems involving assessment of the latter involve mostly operational problems. In this paper a measure of causal dispersion is advanced, and empirically demonstrated, as a measure capable of assessing both constructs. In doing so, the distinction between attributions and the attributional focus is highlighted. Finally, implications for attribution researchers are discussed.

Introduction

Beyond these matters of social and self-perception, attribution theory is related to a more general field that might be called psychological epistemology. This has to do with the processes by which man "knows" his world and, more importantly, knows that he knows, that is, has a sense that his beliefs and judgments are veridical (Kelley 1973, p.107).

Attribution theory deals with the processes by which individuals assign causality to events. When an individual makes an attribution for some effect, s/he is implicitly saying "I know what caused the effect." However, because individuals may make attributions with varying degrees of confidence, even more important than the attribution itself may be that the attributor "knows that s/he knows." Therefore, from an attributional research perspective, two important issues are the measurement of what the perceiver "knows" to be the causal entity and how much s/he "knows that s/he knows." The former issue translates into one of determining the attributional focus, while the latter translates into one of determining attributional confidence.

Study Purpose

The first purpose of the present paper is to propose an attribution scale-based derivative measure for determining both the attributional focus and attributional confidence in attribution research. The proposed measure for measuring both cognitions is a measure of causal dispersion. Causal dispersion can be defined as the variance in perceived causal probability across a given set of possible attributions for an event. As such, the measure is very closely related to Mizerski's (1978) causal complexity measure, but may be better suited for some attribution research studies. The second purpose of the present research is to investigate if a measure of causal dispersion derived from nonabstract "specific-item" attribution scales (e.g., "the car's poor gas mileage is the reason it is being discounted"), performs differentially than a causal dispersion measure derived from more abstract "general-item" attribution scales

(e.g., "something about the car in general is the reason it is being discounted").

However, first discussions regarding the importance of attribution focus and confidence determination are provided. Then a measure of causal dispersion is proposed, followed by theoretical predictions between causal dispersion and other constructs. Finally, a measure of causal dispersion derived from specific-item attribution scales, in addition to the one derived from general-item attribution scales, are employed in an attempt to measure both the attributional focus and attributional confidence. The validity of the two measures is assessed in accord with each one's consistency with theoretically-based predictions.

Attributional Focus Determination

The attributional focus is the "object" of the attribution process, that is, the *entity* about which causal beliefs will be formed (Mizerski, Golden, and Kernan 1979). For example, if an individual were to assess the probability as .6 that an advertised discount on an automobile were due to one or more product-related causes (e.g., "because the automobile has poor styling," and/or "because the automobile is a lemon," etc.), and .4 that the discount was due to one or more person-related causes (e.g., "because the dealership wants to create the image of a discounter," and/or "because the salesman wants to make quota," etc.), the product would represent the attributional focus because it is the *entity* which occupies the majority of the perceiver's causal allocation.

In many consumer behavior situations, determination of the attributional focus represents a difficult task. As depicted in the example above, because many consumer behavior situations involve an interaction of perceptual areas (e.g., a salesperson (person) making a claim about a product (object)), many times the attributional focus is not clear. For example, a consumer may make either of the two product-focused attributions and/or either of the two object-focused attributions mentioned above to account for a price discount. Or, a consumer may attribute the discount claim to neither person or automobile, but rather to some particular circumstance, e.g., "overshipment from the manufacturer." Or, finally, consistent with Mizerski's (1978, p.221) contention that consumers generally feel that information from or about the marketplace is the result of a mix of stimulus, person, and circumstance causes, the consumer may make a combination of these attributions. Unfortunately, attribution theory does not provide clear rules for determining the attributional focus (Mizerski et al. 1979). Although framing attributional questions for subjects in an experimental setting may increase the likelihood that the problem will be perceived in the manner framed, it is quite possible that subjects may respond to a person-perception-framed question (e.g., why did the salesman make that claim?) with object-focused attributions, and likewise, to an object-perception-framed question (e.g., why is this automobile being discounted?) with person-focused attributions.

For at least two reasons, attributional focus determination is important to attribution researchers. First, and most obvious, a perceiver's attributional focus represents his/her perception of the causal entity of the observed effect. Thus, in consumer behavior situations that reflect an interaction of perceptual areas, if the researcher is to determine the perceived causal entity for an effect, it is imperative to determine the attributional focus, because the two are one and the same. Second, from a theory application perspective, it is of critical importance to consumer attribution research to identify the attributional focus that consumers use because misspecification will lead researchers into focusing causation on the wrong entity, and concomitantly, into choosing an inappropriate theoretical paradigm (Mizerski et al. 1979, p. 131). For example, if an attributor focuses predominantly on the offering merchant in his/her search for attributions to account for a price discount, the perceiver would be viewing the situation as one of person-perception, and thus, the attributional focus would be the merchant. From a research perspective, theories of person-perception capable of addressing questions of merchant disposition (e.g., Correspondent Inference Theory, Jones and Davis 1965), would become more applicable as the causal probability assigned to the merchant increased. Likewise, if the attributor focused predominantly on attributes of the automobile which may have prompted such a price discount claim, the attributor would be perceiving the situation as one of object-perception, and thus, the attributional focus would be the automobile. From a research perspective, theories which address merchant disposition become less appropriate as the causal probability assigned to the object increases.

From a theoretical perspective, the Mizerski et al. (1979) distinction between attributions and attributional focus is consistent with Calder's (1977a,b) contention that everyday attributions by individuals are made at low levels of abstraction (e.g., "because the car has poor styling"). It is of importance only to the attribution theorist to elevate these attributions to higher levels of abstraction, i.e., to the level of the attributional focus (e.g., "because of something about the stimulus") for scientific explanation purposes. Despite this difference, however, it appears that several researchers have attempted to measure nonabstract attributions with measures of the more abstract, attributional focus. For example, many researchers have attempted to use measures such as "How likely is it that the effect was caused by something about the product?" to measure attributions (cf. McArthur 1972; Jolibert and Peterson 1976; Major 1980; Sparkman and Locander 1980). From a theoretical perspective, these measures are at a level of abstraction equivalent to that of the attributional focus. Thus, such abstract measures are not attribution measures, but rather, are measures of the attributional focus.

On an empirical plane, however, Lichtenstein and Bearden (1986) provided evidence which suggest that these measures even lack validity as measures of the attributional focus. In their study, Lichtenstein and Bearden measured product, person, and circumstance attributions by scales consisting of 10, 6, and 7 specific-item attribution measures, respectively. They also measured these three attributions using the single, general-item measures. Their results failed to provide evidence of convergent or discriminant validity between the two different measurement procedures. That is, respondents did not engage in the cognitive task of

summing multiple nonabstract attributions to arrive at an attributional focus. Further, predictive validity was found between the specific-item attribution measures and theoretically related constructs, but not for the general-item measures. These results led Lichtenstein and Bearden to suggest that the same concepts are possibly not being measured when attribution measurement shifts from lower to higher levels of abstraction.

Consequently, questions regarding attribution focus determination remain. One way to do this would be to simply ask subjects for their perception as to the cause of some observed effect. The experimenter could then classify these attributions into attribution focus categories. However, while such free elicitation procedures have been successfully employed in measuring the existence of attribution processing (cf. Smith and Hunt 1978), Elig and Frieze (1979) found that when the attributions had to be classified into a taxonomy, attributions measured via free elicitation lacked both validity and reliability when compared to structured methods of measurement (Elig and Frieze 1979). This is potentially due to the traditional coding and classification problems that accompany all open-ended questions (Peterson 1982). For example, is "because the dealership is in a cash flow bind" a person (e.g., poor cash management) or circumstance (e.g., unforeseen expenses) cause? A researcher can use his/her inference in classifying attributions but the correct classification is the one used by respondents (Weiner 1985).

Elig and Frieze (1979) and Weiner (1985) have suggested, on grounds of both validity and reliability, a two-step approach to measuring attributions. In the first step, a pretest sample is asked to provide possible attributions for some hypothetical event. In the second step, these attributions are converted to scale form. One potential problem, though, with this approach is the way in which the attribution problem is framed, i.e., either person- or object-perception, may affect attributions respondents provide. However, this procedure has the psychometric advantages of structured methods (Elig and Frieze 1979). Also, the attribution measures represent those of the respondent rather than those of the researcher (cf. Weiner 1985, p. 552). This method is also able to take advantage of factor analysis, which is one of the most common mathematical techniques used to analyze the responses of research participants to discover the underlying causal structure (Weiner 1985). Because factor analysis allows looking at the covariance between attributions as perceived by respondents, this method also allows for the classification of an attribution into a category as seen by respondents.

In addition to these attribution measurement advantages, and of particular relevance here, this method also allows for the determination of the attributional focus. That is, by calculating a derivative measure of the specific-item attributions, evidence of the attributional focus can be obtained. A measure of causal dispersion is proposed here as such a measure.

Attributional Confidence Determination

Also of critical importance to attribution researchers is the ability to measure a respondent's attributional confidence. This is evidenced by the fact that better than one-third of the research efforts cited in Mizerski et al.'s review article (1979) employed explicit or surrogate measures of attributional confidence. It has also been suggested that there may be a relationship between attributional confidence and actions resulting

from attributions, such that the higher the level of attributional confidence, the more likely actions will follow the attributions (Mizerski et al. 1979).

While there seems to be some consensus regarding the importance of attributional confidence, its measurement has created some controversy. The most common method of measuring attributional confidence is to have subjects respond to "confident-not confident" scales regarding their attributions (cf. Calder and Burnkrant 1977). However, there appears to be some controversy regarding the possibility that these confidence measures are redundant with the attribution measures themselves, i.e., attributional confidence is reflected by the extremity of the attribution, and thus, they are equivalent and inseparable measures (cf. Mizerski 1975; Mizerski et al. 1979). While controversy remains in this area, it appears plausible to suggest that a measure of attributional confidence that did not mirror the method used for measuring attribution extremity, i.e., scales, may provide a more unique measure of attribution confidence. A measure of causal dispersion is proposed here as such a measure.

The Relationship Between Causal Complexity and Causal Dispersion

Causal complexity refers to a perceiver's attribution allocation among various possible causes. Those perceivers who are the most causally complex are those that: a) recognize more possible causes of an event, and b) weigh the potential causes equally with respect to causal probability (Mizerski 1978). While both criteria are integral in assessing an individual's causal complexity, in some research applications, a less precise but more practical measure may be advantageous. For example, Mizerski (1978) listed five possible attributions for an effect and also an "other" category in which subjects could supply their own attribution. Thus, there were six possible responses. Subjects were to respond to each by supplying the probability that the particular cause was responsible for the effect. The responses had to total to one hundred percent, i.e., the subject had to account for all possible causes for the effect.

From an attribution research perspective, there may be problems with this approach. First, it is very likely that the number of possible attributions for an observed effect in a given situation may be very large, i.e., many more than six. As the list of possible attributions grows larger, the cognitive task asked of respondents of dividing one hundred percentage points becomes very difficult. Further, as the list of possible attributions grows larger, many of the attributions may be perceived as very similar by some respondents. Therefore, using a percentage approach may represent "double-counting" some attributions, thereby overstating their probability while understating the probability of other attributions. For example, based on the suggestions of Elig and Frieze (1979) and Weiner (1985) on grounds of reliability and validity, Lichtenstein and Bearden (1986) conducted a pretest to elicit attributions to account for why a particular automobile dealership was offering a price discount on one of their automobiles. They obtained thirty-four attributions, some of which were similar. In addition to the cognitive task problem that would have occurred if subjects had been asked to divide 100 percentage points between the thirty-four possible causes, because it is likely that for many respondents that at least two of the attributions were

perceived as the same, or at least very similar, this procedure would likely have resulted in double-counting. Instead, Lichtenstein and Bearden converted the attributions to probable-improbable scales for the main study to assess the probability of each as the causal factor.

One might suggest that many of the thirty-four attributions might be similar enough that they could be combined at a higher level of abstraction, thereby limiting the number of possible attributions. This solution would address both the "double-counting" problem and also the problem of the large cognitive task asked of respondents. For example, instead of having both "because the car has poor styling," and "because the car is poor on economy," etc., one might have "because of something about the automobile itself." As a matter of fact, this is what Mizerski (1978) did. However, again, Lichtenstein and Bearden (1986) provided evidence that respondents cannot or do not engage in the cognitive task of summing specific-item attributions into abstract general-item attributions. Therefore, in addition to the causal probability assigned to the general-item measure being questionable, any derivative measure of the general-item attribution scales, e.g., a general-item-based causal dispersion measure, must also be questioned.

By sacrificing one of the two criteria used by Mizerski (1978), a measure correlated to the causal complexity measure employed by Mizerski can be obtained. Causal dispersion is such a measure and is proposed here as more applicable for some attribution research. A measure of causal dispersion can be obtained by employing only the second criteria employed by Mizerski (1978). Thus, given the thirty-four possible attributions used by Lichtenstein and Bearden (1986), an individual's causal dispersion can be measured by the standard deviation of responses across the thirty-four probable-improbable scales. An individual of high causal dispersion (i.e., a high standard deviation) would be an individual who responded "very probable" on some scales and "very improbable" on others. These individuals are able to discriminate between likely and unlikely causes for an effect. Those individuals who respond in a similar manner, with respect to probability, to all attributions, whether all high, low, or somewhere in between, would be of low causal dispersion, and thus cannot discriminate between likely and unlikely causes.

Causal Dispersion and Attributional Focus/Confidence

Two hypotheses developed by Mizerski (1978) were used as a basis for the present analysis. First, based on the discounting principle, which suggests the role of a given cause in producing a given effect is discounted if other plausible causes are also present (Kelley 1973), Mizerski (1978) hypothesized that causally simple subjects will tend to form stronger stimulus attributions (i.e., attribute more of the total causation to the product on which the information is given). Mizerski's rationale was that without information to the contrary, stimulus attributions tend to be expected. Therefore, a large number of person or circumstance attributions should discount (in the consumer's mind) the possibility of a stimulus cause. This present author agrees with this statement when the stimulus represents the attributional focus. Mizerski et al. (1979) contends that the determinant of the attributional focus should be the "object" of the attributional process, that is, the entity about which causal beliefs will be formed. Thus, if the person

represents the attributional focus, then it stands to reason that the presence of stimulus or circumstance causes should discount the otherwise expected person cause. Although the attribution question in the present investigation was framed as one of person-perception, it is no guarantee that the person was perceived as the attributional focus. Therefore, in conjunction with the purpose of the present paper (i.e., determination rather than confirmation of the attributional focus), no hypothesis is offered here. Evidence of the attributional focus can be addressed by examining the relationship between causal dispersion and the allocation of causation between product, person, and circumstance attributions and between causal dispersion and correspondent inferences (since correspondent inferences are attributions of intent or disposition to the focal person).

Mizerski (1978) also hypothesized that causally simple subjects will tend to be more confident in their causal allocations based on the rationale that one is more confident in a sharply peaked distribution than a broad one. Based on the same rationale in conjunction with the rationale of Kelley (1967, p. 213) that once attributions are made, they become the basis for making further ones, as causal dispersion increases, so should confidence in subsequent attributions. Thus, evidence of causal dispersion as a measure of attributional confidence can be addressed by examining the relationship between causal dispersion and confidence in correspondent inferences.

Both the attributional focus and attributional confidence analyses will be conducted for a causal dispersion measure derived from specific-item attribution measures, and a causal dispersion measure derived from three abstract, general-item measures. Consistent with Calder's (1977a,b) contention and the findings of Lichtenstein and Bearden (1986), it is hypothesized that the former measure of causal dispersion will outperform the latter as indicated by the consistency of results within both analyses.

Method

Data were collected in a 2x2x2x2 study designed to assess the effects of price discounts on consumer attributions. Subjects were exposed to a Volkswagen Rabbit automobile advertisement in which a price discount was offered. They were asked to respond to a series of scales regarding why they thought the merchant was offering the discount and also, what they thought of the merchant. Subjects were 544 undergraduate business majors at a large state university. Because the manipulations are beyond the scope of this paper, they will not be discussed. However, in order to insure that the obtained results were not a product of the manipulations, a pooled within-cell analysis was performed.

Variable Operationalizations

Consistent with the procedures suggested by Elig and Frieze (1979), a pretest sample of 50 undergraduate business majors responded to an open-ended question asking for reasons why a dealership would offer a price discount. A total of thirty-four responses were obtained. These responses were then converted to the nine-point probable-improbable statements shown in Table 1. Using data from the experiment, the thirty-four statements were subjected to an unrestricted principle components factor analysis. Seven factors had eigen values greater than one, therefore the analysis was

reconducted restricting the number of factors to seven. It appeared that four of the factors were person-related factors, two were circumstance-related, and one was product-related. Thus, based on this interpretation and given the a priori notion of Kelley that person, stimulus, and circumstance attributions exhaust the causal space, the analysis was reconducted again restricting the number of factors to three. The factor structure is shown in Table 1. (Similar results with no substantive differences were found using common exploratory factor analysis using a varimax rotation). It does appear that the three factors can be interpreted as representing product, circumstance, and person attributions, respectively. Also, no item interpreted as a person, product, or circumstance attribution in the seven-factor solution loaded on any other factor in the three factor solution, e.g., no person item in the seven-factor solution loaded on the product or circumstance factor in the three-factor solution. A split-half analysis was also conducted and supported the stability of the three-factor solution. Thus, the items comprising the respective factors in Table 1 were summed into subscales (cf. Yalch and Yoshida 1983). Coefficient alpha estimates for the three subscales were .81, .78, and .68, respectively. In addition to these summed specific-item measures, product, person, and circumstance attributions were also assessed via single, nine-point general-item measures (cf. Sparkman and Locander 1980). For example, the general-item person measure was "How probable is it that the discount was due to something about Lott Volkswagen?"

Evaluation of the merchant making the price claim was operationalized in terms of correspondent inferences (Jones and Davis 1965) toward the automobile dealership. A correspondent inference is an inference about individual's intentions and dispositions that follows directly from or corresponds to their behavior. In the present analysis, Lott Volkswagen was personified as the individual and the offering of the price discount represented the behavior. A correspondence in attribution is operationally defined in terms of personality trait attributions (cf. Calder and Burnkrant 1977). Thus, correspondent inferences were operationalized by summing nineteen nine-place personality trait semantic differential scales (e.g., trustworthiness, greediness, honesty, caring). Coefficient alpha was .90.

A confidence in correspondence inference measure was also assessed. After each of the nineteen individual correspondent inference scales was a nine-place confident-not confident scale. Thus, confidence was directly measured for each individual attribution. The nineteen confidence measures were then summed to yield an overall confidence measure.

Two measures of causal dispersion were assessed. The first one, which is labeled here as "specific-item causal dispersion," was measured as a respondent's standard deviation across the thirty-four specific-item probable-improbable scales shown in Table 1. Subjects with the highest standard deviations represented those of high causal dispersion, and subjects with low standard deviations represented those of low causal dispersion. The second measure of causal dispersion, labeled here as "general-item causal dispersion," was measured as a respondent's standard deviation across the three general-item attribution measures. Mizerski (1978) ordered respondents along a causal complexity continuum and conducted analyses on the upper and lower quartiles. A

Table 1
Specific-Item Attribution Measures and
Factor Loadings

	Product	Circumstance	Person
1. Because the car is inferior.	<u>.60</u>	.08	-.05
2. Just to make the customer think he/she is getting a good deal.	.05	.28	.26
3. To sell inventory to avoid the high carrying cost of inventory.	.01	<u>.69</u>	.03
4. Because the car is an older model.	.29	.37	-.17
5. To meet the continued competition that exists in the industry.	-.13	.05	<u>.54</u>
6. To sellout present inventory to make room for new models.	-.01	<u>.52</u>	.24
7. Because the car is unpopular.	<u>.63</u>	.09	-.06
8. To enhance customer goodwill.	-.10	-.01	<u>.52</u>
9. Because the dealer is in a cash flow bind.	.23	<u>.51</u>	.07
10. Because the car has unusual accessories.	<u>.55</u>	.21	.04
11. Because of the desire to create a discounter image.	-.02	.11	.39
12. To meet competition on a particular occasion.	.03	.08	<u>.58</u>
13. Because replacement parts are hard to obtain for these cars.	<u>.61</u>	-.03	.01
14. To stimulate new business, i.e., attract new customers.	-.22	.22	<u>.59</u>
15. To stimulate introductory sales of a new car.	.10	-.04	<u>.61</u>
16. Because of lack of accessories.	<u>.56</u>	-.01	-.01
17. To attempt to get customers to the showroom.	-.13	.27	.42
18. Because of an approaching deadline to meet a sales quota.	.10	<u>.59</u>	.19
19. Because the car has gotten bad public relations.	<u>.61</u>	.16	.13
20. Because these cars have been on the lot too long.	.17	<u>.68</u>	.02
21. Because of an oversupply of this particular model.	.11	<u>.68</u>	.10
22. Because the car has poor styling.	<u>.71</u>	.08	.05
23. Because the dealer is following a sales (versus profit) objective.	.13	.09	.28
24. Because the dealer received a special deal from the manufacturer.	.14	.18	.28
25. Because the car's performance is poor.	<u>.64</u>	.05	-.10
26. Because the dealer wants to avoid paying inventory tax.	.05	<u>.70</u>	.01
27. To compensate for high interest rates.	.06	.37	.20
28. Because of a poor assortment of remaining cars.	<u>.45</u>	.19	.01
29. Because the car is poor on economy.	<u>.60</u>	.10	-.06
30. Because the dealer wanted to advertise anyway and chose price.	.09	.08	.32
31. Because of a dealer contest.	.25	.27	.14
32. Because of an overshipment from the manufacturer.	.17	.33	.26
33. To make the consumer aware of the car.	-.04	-.05	<u>.61</u>
34. To increase sales.	-.23	.26	.44

similar partitioning was used here for both causal dispersion measures.

Results

Pooled mean scores and correlation coefficients used to address both the attributional focus and confidence issues are presented in Table 2. The pooling process entailed calculating a mean score and correlation coefficient within each of the 16 experimental cells for each variable/relationship shown in Table 2. Weighted averages (based on cell sizes) of means and correlation coefficients were then calculated. These weighted averages are the values reported in Table 2. (Statistical significance was calculated within each cell and is referenced by notes c and d in Table 2).

For the specific-item dispersion measure, adjusting for the number of items in each scale, respondents of high dispersion made stronger person attributions than circumstance or product attributions. Also, high dispersion respondents made stronger person attributions than did those of low causal dispersion. These results suggest a person attribution focus. For the general-item dispersion measure, subjects of low causal dispersion made stronger product, person, and circumstance attributions than those of high causal dispersion,

although those of high dispersion did make stronger person attributions, as opposed to product or circumstance attributions. The correlation coefficients reported at the bottom of Table 2 provide additional evidence. For the specific-item measure, with increasing causal dispersion, there was an increase in person attributions and a concomitant strong decrease in product attributions as predicted. For the general-item dispersion measure, all attributions decrease with increasing causal dispersion.

Since correspondent inference attributions are person attributions, it is also appropriate to use them in addressing the attributional focus determination issue. Once again, by looking at the means, for the specific-item measure, high dispersion subjects made much stronger correspondent inference attributions than low dispersion subjects. For the general-item dispersion measure, although the difference is very slight, individuals of low causal dispersion made stronger correspondent inferences than those of high dispersion. Again, the correlation coefficients reported at the bottom of Table 2 support this. For the specific-item measures, as causal dispersion increased, correspondent inferences increased as predicted. Again, this is not the case for the general-item dispersion measure, which

Table 2
Pooled Within-Cell Mean and Correlation Analyses of the Relationship Between
Causal Dispersion and Attributional Outcomes^a

Attribution Outcomes	Specific-Item Dispersion		General-Item Dispersion	
	High Dispersion (n=127)	Low Dispersion (n=127)	High Dispersion (n=140)	Low Dispersion (n=148)
Means				
Product Attribution ^b	2.49 ^c	4.19	4.35 ^c	6.23
Person Attribution ^b	7.08 ^c	6.29	5.85	6.39
Circumstance Attribution ^b	6.54	6.23	5.21 ^c	6.23
Correspondent Inference	121.57 ^c	107.75	116.62	117.36
Confidence in Attribution	122.60	110.83	118.89	116.47

Pearson Correlations	Specific-Item Dispersion	General-Item Dispersion
Product Attribution	-.51 ^d	-.32 ^d
Person Attribution	.25 ^d	-.12
Circumstance Attribution	.10	-.12
Correspondent Inference	.30 ^d	.00
Confidence in Attribution	.10	-.01

- a The pooled within-cell analysis entailed calculating each mean and correlation for all 16 experimental cells individually, then calculating an average across 16 cells weighted by cell sizes. For correlations all cell sizes were 34. For mean analyses, because of the quartile split cell sizes ranged from 5 to 15.
- b Since product, person and circumstance attributions for the specific-item measures were measured by varying numbers of items, an average scale value was calculated to permit comparisons with general-item measures.
- c Difference in means is significant ($p < .01$) between those of high and those of low causal dispersion in at least a majority of experimental cells.
- d Correlations were statistically significant ($p < .01$) in at least a majority of experimental cells.

does not show any evidence of being correlated at all with correspondent inferences. Thus, for the specific-item causal dispersion measure, a consistent pattern of results across all attribution measures for both the mean and correlational analyses provides evidence that the person was perceived as the attributional focus. However, the general-item dispersion measure failed to provide any theoretically-consistent results across the attributional constructs for either analysis. The totality of the evidence suggests: (1) the person represents the attributional focus in the present investigation, and (2) only the specific-item dispersion measure was capable of determining it.

The confidence issue can be addressed by considering the confidence in correspondent inference measures also reported in Table 2. For the specific-item dispersion measure, subjects of high causal dispersion did display higher attributional confidence. However, for the general-item dispersion measure, the difference was much smaller. Further evidence is provided by the correlation coefficients between confidence and the dispersion measures. Confidence was positively correlated to the specific-item dispersion measure, but not the general-item measure. Again, these findings are taken as support for causal dispersion as a measure of attributional confidence for the specific-item measure only.

Discussion

A dual purpose of the present study was to propose a measure for determining both the attributional focus and attributional confidence in an experimental setting. A measure of causal dispersion was proposed as such a measure. Another purpose was to demonstrate that causal dispersion derived from specific-item attributions, and not general-item attributions, was a valid measure. Mean and correlational analyses provided evidence of specific-item, but not general-item, dispersion as a valid

measure of both the attributional focus and attributional confidence.

These results have implications for attribution researchers. First, as evidenced by the poor results associated with the causal dispersion measure derived from the general-item attribution measures, valid attribution measurement is a necessary condition for a valid measure of dispersion, and thus, also for attributional focus/confidence determination. Second, the present study also empirically demonstrates the difference between attributions and the attributional focus. That is, it is quite possible, and even probable in consumer behavior situations, to have a consumer make a mix of product, person, and circumstance attributions to account for some effect in the marketplace. Yet, only that entity which receives the largest summated probability rating, is the attributional focus. Finally, given the evidence provided regarding causal dispersion as a measure of confidence, because dispersion is a derivative rather than a direct scale measure, the criticism of the confidence measure being isomorphic with attribution extremity is not applicable. If the past similarity of measurement procedures is at least partially responsible for the high correlations between attribution extremity and attributional confidence, perhaps dispersion can provide a more accurate reading of a respondent's attributional confidence, which in turn, may allow researchers to be more successful in using confidence as a moderating variable in assessing the impact of attributions on various attributional outcomes.

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Base Rate Information, Causal Inference, and Preference

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Abstract

Although Kelley's (1967) attribution theory was initially designed to explain inference processes in person perception, the present study demonstrates that the theory also has direct implications for product perception. In addition, the effects of distinctiveness, consistency, and consensus (base rate) information on inferences about products, and the link between inference and preference are examined.

Introduction

Consumers are exposed to the product-related opinions and actions of other consumers every day. Although some research has been conducted on the effects of the product-related opinions of others on product judgments (e.g., word-of-mouth effects, see Arndt 1967, Bauer 1967, Reingen and Kernan 1986, Richins 1983), the effects of the product-related actions of others on product judgments have been neglected. This is unfortunate because actions often speak louder than words (Amabile and Kabat 1982). The present pilot study explores some effects of the product-related actions of others on product judgments.

One theoretical framework that seems particularly well-suited for addressing this issue is Kelley's (1967, 1972a, 1972b, 1973) attribution theory. According to Kelley, the inferences that people draw about the actions of others are contingent upon three types of information: consistency information (e.g., To what extent does the actor's behavior toward an object generalize across situations?), distinctiveness information (e.g., To what extent does the actor's behavior toward an object generalize across objects?), and consensus information (e.g., To what extent does the actor's behavior toward an object generalize across people?). The patterns observed among these three types of information have been shown to have implications for judgments about the extent to which the actor's behavior is attributed to his or her personal traits and characteristics, as opposed to other factors (e.g., some situational variable may have caused the actor's behavior).

Although Kelley's model was initially designed to explain inference processes in person perception, many researchers have shown that the theory has interesting implications for consumer choice (Calder and Burnkrant 1977, Golden 1977, Hansen and Scott 1976, Mizerski et al. 1979, Settle 1972, Settle and Golden 1974, Sparkman and Locander 1980). For example, several studies have shown that the inferences consumers draw about a spokesperson's endorsement of a given product in an ad can exert a strong influence on product evaluations. More favorable judgments of a product are formed when consumers infer that the endorser's behavior was prompted by dispositional factors (e.g., the endorser honestly believes that the product is a superior product) than when consumers infer that the endorser's behavior was situationally-guided (e.g., the endorser is being compensated very generously). Thus, causal inference can

exert an indirect influence on product perception by first influencing person perception.

However, it seems likely that causal inference can also have a direct impact on product perception. Consider the case in which a consumer observes another consumer (the actor) buying a particular brand of beer. Characteristics of the brand (rather than of the actor) are likely to be seen as the principle cause of the actor's behavior (a) if the actor frequently (rather than infrequently) buys this brand, (b) if the actor buys only this brand (rather than buying many different brands), or (c) if many people (rather than only a few) buy this brand. The above three examples imply that consistency, distinctiveness, and consensus information, respectively, may have direct and independent effects on inferences about the extent to which the characteristics of the target brand (as opposed to other factors) cause an actor to purchase the brand. However, Kelley (see Orvis, Cunningham, and Kelley 1975) argues that the three types of information are used configurally. That is, when one type of information is missing, its value may be inferred on the basis of the remaining two types of information, and then all three types of information may be integrated to form an attributional judgment.

Wyer and Carlston (1979), however, disagree with Kelley's notions on configural information processing in attribution. They argue that each type of information is useful even in the absence of knowledge about the remaining types. Moreover, they argue that the interactive effects of consistency, distinctiveness, and consensus information that have been observed in the classic tests of Kelley's model derive from the confounding of the three types of information in the stimulus materials. For example, consider the statements "John laughs at the comedian" and "John does not laugh at almost any other comedian" (McArthur 1972, 1976; Orvis et al. 1975). These statements are not explicitly tied to a given situation and may be interpreted as occurring either in a limited domain or across a wide variety of situations. To avoid this confound in the present study, all three types of information were provided explicitly and one and only one type was manipulated at a time.

The Base Rate Fallacy

Although a great deal of empirical evidence indicates that consistency and distinctiveness information affect attributional judgments in a normatively prescribed manner (for reviews see Harvey and Weary 1984, Kelley and Michela 1980, Mizerski et al. 1979), several studies have shown that, under some circumstances, individuals tend to underutilize consensus information (Cooper et al. 1972; McArthur 1972, 1976; Miller et al. 1974; Nisbett and Borgida 1975; Nisbett et al. 1976).

For example, Nisbett and Borgida (1975) described two classic social psychological studies (Darley and Latane 1968, Milgram 1963) to subjects and asked them to explain why a particular participant in these studies behaved in an unexpected manner. Prior to making this attributional judgment, subjects in consensus information conditions were informed that most of the participants behaved in this unexpected manner (precise distributional

¹ The author wishes to thank David M. Sanbonmatsu for his helpful comments on an earlier draft

information was provided), whereas subjects in no consensus information conditions did not receive this information. The results indicated that consensus information had no influence on subjects' attributional judgments: extreme dispositional attributions were formed in all conditions.

Nisbett and Borgida suggested that the failure to use consensus information in forming causal inferences reflects a general tendency for individuals to underutilize base rate information when assigning objects to categories (Tversky and Kahneman 1973). Although there is considerable evidence indicating that people often underutilize base rate information (for reviews see Kahneman et al. 1982, Nisbett and Ross 1980), there is also a growing literature on the conditions that moderate the use of base rate information (for reviews see Bar-Hillel 1980, Borgida and Brekke 1981, Kassir 1979, Ofir and Lynch 1984). For example, individuals are more likely to use base rate information (a) when it is presented in a concrete - rather than in an abstract - fashion (Borgida and Nisbett 1977), (b) when the social desirability of this information is high rather than low (Zuckerman 1978), (c) when this information is not accompanied by individuating information (e.g., information that highlights the idiosyncratic characteristics of the actor, Zuckerman 1978), and (d) when base rate information is presented in a within-subjects context (Fischhoff and Bar-Hillel 1984).

Finally, (e) it seems that base rate information is likely to be used in consumer settings. The product-related actions of others provide a very rich and useful source of information about products and this principle is widely applied by marketing practitioners: Advertisers often tell us that their products are the "fastest growing" or the "largest selling;" salespeople often display testimonials from satisfied customers; and fundraisers often provide long lists of names of donors to potential donors (Cialdini 1985, Kernan and Reingen 1985).

A Pilot Study

All five of the above conditions were met in the present study, and, hence, it was predicted that base rate information should influence attributions in the manner prescribed by Kelley. Following Kelley, it was predicted that subjects should attribute the cause of the actor's behavior primarily to the characteristics of the target brand (as opposed to other factors) when consistency, distinctiveness, or consensus is high as opposed to low. Further, the relationship between causal inference and preference was examined.

Method

Subjects and Design

Fifty-three undergraduates were asked to complete a questionnaire pertaining to how consumers draw conclusions about different brands of beer on the basis of very limited information. Eight of these students were non-beer drinkers and were excluded from the analysis. Subjects were randomly assigned to one of three conditions in which either situation (consistency), brand (distinctiveness), or person (consensus) generalization information was manipulated (n per cell = 15).

Stimulus Materials

In the high generalization across situations condition (high consistency), subjects read that "Dave buys Brand I (but not Brand J or Brand L) whether or not

there's a sale" and "Jack does not buy Brand I" and "John does not buy Brand I."

In the high generalization across brands condition (low distinctiveness), subjects were told that "Dave buys Brand I and Brand J and Brand L when there's a sale (but not when there's not a sale)" and "Jack does not buy Brand I" and "John does not buy Brand I."

In the high generalization across people condition (high consensus), subjects learned that "Dave buys Brand I" (but not Brand J or Brand L) when there's a sale (but not when there's not a sale)" and "Jack buys Brand I" and "John buys Brand I." In addition, all subjects received low generalization information pertaining to a second target brand (Brand J).

Although the stimuli described above are rather artificial, they have several desirable qualities: (a) novel stimuli are useful for controlling for prior knowledge and experience effects, (b) unlike previous studies, no abstract, implicit qualifiers (e.g., qualifiers such as "some" or "most") are used to manipulate generalization information, (c) buying beer is socially acceptable, (d) no individuating information is provided, and (e) the above procedure permits within-subjects comparisons.

Manipulation Check, Causal Inference, and Preference Measures

After reading the generalization information, subjects were asked to indicate how many people buy the target brand (Brand I), how many brands the actor (Dave) buys, and how frequently the actor buys the target brand on three 11-point semantic differential scales ranging from 0 (none) to 10 (all).

Next subjects were asked to judge the extent to which the characteristics of the target brand (e.g., its taste, its quality), caused the actor to make the purchase. Henceforth, this type of judgment will be referred to as a *brand attribution*. Brand attributions were measured on an 11-point scale ranging from 0 (the target brand's characteristics are irrelevant [other factors are much more important]) to 10 (the target brand's characteristics are the sole cause of the actor's behavior).

Subjects were also asked to judge the extent to which the actor's personal characteristics (his personal tastes and preferences) and the extent to which situational factors caused his behavior. Again, 11-point scales with detailed information presented at the end-points were employed. Finally, subjects were asked to indicate which brand they personally would prefer, Brand I or Brand J.

Results

Manipulation Checks

Generalization judgments are presented in Table 1. As Table 1 indicates, the situation generalization (consistency) and the person generalization (consensus or base rate) manipulations were highly effective. However, the brand generalization (distinctiveness) manipulation was very weak (but the pattern of results was in the anticipated direction).

Causal Inference

Brand attributions as a function of situation, brand, and person generalization information are presented in Table 2. As Table 2 indicates, more extreme brand attributions (e.g., more extreme beliefs that characteristics of the target brand caused the actor to

Table 1
Generalization Judgments

Type of information	Generalization manipulation		t	p
	High	Low		
Situation	8.80	5.13	4.95	.001
Brand	4.80	3.80	1.07	ns
Base rate	4.80	2.20	3.60	.01

Table 2
Brand Attributions

Type of information	Generalization manipulation		t	p
	High	Low		
Situation	6.87	4.13	3.18	.01
Brand	2.53	3.67	-2.09	.06
Base rate	2.53	3.13	-1.87	.09

make the purchase) were formed in high (e.g., the actor buys the target brand across situations) than in low situation generalization conditions, as predicted. Moreover, subjects tended to form more extreme brand attributions in low (e.g., the actor buys only the target brand) than in high brand generalization conditions. Thus, subjects tended to use situation and brand generalization information in a manner consistent with Kelley's principles.

However, base rate (person generalization) information had only a marginally significant effect on brand attributions. Subjects tended to form more extreme brand attributions in low (e.g., only the actor buys the target brand) than in high (e.g., the actor and others buy the target brand) person generalization conditions. This pattern is opposite to the pattern prescribed by Kelley's model.

Preference

Eighty percent of the subjects preferred the target brand in high than in low situation generalization conditions, chi-square = 5.40, $p < .02$. Moreover, more extreme brand attributions were formed in high than in low situation generalization conditions. Hence, in situation generalization conditions, subjects' preferences corresponded closely to their causal inferences.

Brand generalization information, on the other hand, had no influence on subjects' preferences, chi-square = .07. This finding should be interpreted cautiously, however, because the brand generalization manipulation was very weak.

Although base rate information did not have a strong influence on brand attributions, it had a strong impact on subjects' preferences, chi-square = 5.40, $p < .02$. Eighty percent of the subjects preferred the target brand in high than in low person generalization conditions. This finding suggests that little correspondence exists between causal inference and preference in person generalization conditions.

Correlational Analyses

According to Wyer and Carlston (1979), judgments of generalization across situations (x), objects (o), and persons (p) are integrated into brand attributions (J_o) in the following manner: $J_o = x - o + p$. The present data permitted a test of this model. Predicted values of J_o were derived from subjects' generalization judgments. The relation between predicted and obtained values of J_o was statistically significant, $r = .54$, $p < .001$. The predicted situation attributions ($J_x = -x + o + p$) were also significantly related to observed values, $r = .53$, $p < .001$. However, base rate information was not used in the predicted manner ($J_p = x + o - p$), $r = -.02$, *ns*. Again, the results indicate that people fail to use base rate information in a normatively appropriate manner.

Discussion

The results indicate that brand and situation generalization information can have direct and independent effects on consumers' brand attributions. Moreover, causal inferences based on situation generalization information seem to translate directly into preferences. Further, it should be emphasized that care was taken to ensure that subjects would be sensitive to base rate information: (a) base rate information was presented in a very concrete fashion, (b) the actor's behavior was not socially undesirable, (c) no individuating information about the actor was provided, (d) base rate information was manipulated in a within-subjects context, and (e) base rate information was presented in a consumer setting. Nevertheless, subjects clearly underutilized base rate information in their attributional judgments.

Why was base rate information underutilized? One possibility is that subjects may have failed to attend to this information. According to Trope's (1986) two-stage model of attribution, people must first attend to information (the identification stage) before they can use it (the inferential stage). Trope maintains that people do use base rate information when they attend to it. The problem is they often do not attend to it. However, this was clearly not the case in the present study. The manipulation check indicated that subjects did attend to base rate information. Nonetheless, this information was underutilized.

A second possibility is that subjects may have employed the representativeness heuristic (Kahneman and Tversky 1973) in order to simplify the judgment task. However, this possibility seems unlikely for two reasons: (a) very little information was provided to subjects and, hence, information reduction may have been unnecessary, and (b) no individuating information was presented.

Nisbett et al. (1976) offered an alternative to Kahneman and Tversky's representativeness explanation. According to Nisbett et al., individuating information is more concrete and more vivid than base rate information and, consequently, individuating information is weighted much more heavily than base rate information. However, Nisbett et al.'s vividness explanation cannot account for the results of the present study, because base rate information was presented in a very concrete and vivid manner and because no individuating information was provided.

The "relevance" explanation (Bar-Hillel 1980, Ofir and Lynch 1984) has recently been offered as an alternative to the representativeness and vividness explanations. People may ignore base rate information simply because they fail to see the implications of this information for the judgment task at hand. Rather than attempting to apply information that they do not know how to apply, they ignore it.

How can we determine what information is relevant for a given judgment on an a priori basis? What are the defining features of information relevance? According to Kelley, there are three types of attribution-relevant information: consistency, distinctiveness, and consensus information. However, consensus information is often treated as if it were irrelevant. Bar-Hillel suggests that information is ordered in terms of perceived relevance and dominated items are ignored. If consistency and distinctiveness information are perceived as more relevant than consensus information, then subjects may ignore consensus information even if they believe that it is somewhat relevant.

One factor that may influence perceived relevance is information specificity (Bar-Hillel 1980, Ofir and Lynch 1984). If information about a product class and information about a specific subset of that product class is available, the latter type of information should be more relevant for judgments about a specific brand within that subset. Clearly, it should be easier to see the implications of a given piece of information for a given judgment when the information and the judgment are at the same level of specificity. However, in the present study, base rate information was underutilized even though very specific information was provided.

Yet another possibility is that instead of failing to see the implications of the base rate information for the judgment task at hand, subjects may have seen multiple, opposing implications. As a consequence, several opposing psychological forces may have been operating simultaneously. For example, popularity appeals may foster favorable inferences about the attributes of the target brand. After all, products that are sought after by many people must possess some desirable characteristics. Moreover, consumers may learn that it is often "safe" to follow the lead of others. On the other hand, products that can be owned by anyone are often less attractive than products that are only for a select few. People like to think of themselves as being discriminating and unique, and these characteristics are reflected in their desire to purchase products that are, in some sense, unique or uncommon.

Finally, the present data suggest that current notions about the boundary conditions of the base rate fallacy are underconceptualized. Although a rather lengthy list of variables have been identified as moderators of the base rate fallacy, the processes that underly this phenomenon are not well understood. What factors lead consumers to view a given piece of information as causally relevant? Once an item of information has been identified as causally relevant, how is this item integrated with other pieces of relevant information? Although Kelley maintains that causally relevant information is processed configurally, the present data suggest that different types of generalization information can be processed independently. What conditions determine whether configural versus elementistic information processing will occur in causal inference? These and other fundamental questions about consumer inference processes are left for future research.

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An Initial Test of the Effects of Cue Patterns on Behavior and Attributions in a Purchasing Negotiation

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Abstract

This paper describes an experiment which provided an initial test of the effects of varying degrees of behavioral consistency on attributions and behavior in a simulated purchasing negotiation. Subjects faced with behaviorally consistent negotiation partners perceived their partners to be more trustworthy, conceded more, and were more likely to reach an agreement in the negotiation than subjects who negotiated with inconsistent partners.

Introduction

Several researchers have proposed that the impact of one negotiator's behavior on the behavior of another negotiator is mediated, at least in part, by attributions made to account for that behavior (Siegel and Fouraker 1960; Ruben and Brown 1975; Chertkoff and Esser 1976). From this perspective, bargainers are motivated to understand the causes of their partners' negotiating behavior because of their mutual dependence on one another for the attainment of goals. Unfortunately, there are usually several plausible explanations for behavior as complex as bargaining. For example, a seller's tough negotiating behavior could be attributed to dispositional factors such as greed or competitiveness, situational factors such as cost constraints or instructions from superiors, or to both. Thus, negotiators can become mired in a dilemma of trying to choose among several plausible causes for the observed behavior. Recently, Rose and Dickson (1987) proposed that negotiators help resolve this dilemma by judging the degree of consistency exhibited by the other party's behavioral cues. Such cues include the size and pattern of concessions, body language, and verbal and written communications.

This experiment was intended to serve three key purposes: (1) to evaluate subjects' ability to observe and report accurately the patterns in the behavioral cues provided by negotiators, (2) to determine the impact of cue consistency on subjects' bargaining behavior and the impressions they form of their partners, and (3) to examine the strength of the relationship between these impressions and bargaining behavior.

Background and Hypotheses

Consumer researchers and marketing scholars have long recognized the importance of negotiation as a means of exchange for a wide variety of products in consumer as well as in industrial markets (Alderson 1957). Only recently has that perception begun to manifest itself in a growing body of published research designed to improve our understanding of negotiated exchanges and to develop prescriptions for the practice of buyer-seller negotiation. This burgeoning of interest in the study of negotiation has led to a greater depth and breadth of scholarly investigation. Consumer researchers have studied such diverse aspects of negotiation as learning across interactions (Walker 1971), power relationships (Dwyer 1984; Dwyer and Walker 1981; Johnston and Bonoma 1984, McAlister et al. 1986),

perceived similarity between parties to the exchange (Mathews et al. 1972), constituent monitoring (Clopton 1984), and expectations of trust and toughness (Schurr and Ozanne 1985). Most recently researchers have demonstrated increasing concern for the role of negotiation in business relationships (as opposed to single interactions) (Dwyer, Schurr, and Oh 1987) and for the development of heuristic models of the negotiation process (Evans and Beltramini 1987).

The work of consumer researchers in this area draws heavily on and also has begun to extend the results of a very large body of research on the topic of negotiation and conflict resolution in disciplines such as social psychology. (See Lewicki and Litterer 1985; Pruitt 1981; Ruben and Brown 1975.) The extent to which bargaining is characterized by mutual behavioral responsiveness has long been a topic of interest to bargaining scholars. However, most research in this area has examined the effects of individual behavioral cues such as a pattern of concessions on bargaining behavior. This approach maximizes experimental control, but also preempts any opportunity to study such interesting issues as the interactions of behavioral cues, the weights assigned to each cue in forming an impression of an actor, or the nature of the relationships among the cues.

In the model of attributional processing in negotiations proposed by Rose and Dickson (1987), the relationships among a bargainer's behavioral cues are characterized by three aspects of consistency: (1) *temporal consistency* or the extent to which a cue exhibits a pattern over time, (2) *directional consistency* (consistency over modality to use Kelley's (1967) terminology) which is the consistency between the patterns formed by the cues, and (3) *point consistency* or the consistency between two or more cues at any one point in time (i.e., during any bid). The basic assumptions underlying the model are that cues which are directionally patterned over time (i.e., those which move consistently from soft to tough or from tough to soft) provide more information about the negotiator's motivations and intentions than those which are not patterned and that the most plausible cause for a negotiator's behavior is the one which is most consistently signalled by all of the behavioral cues available in the interaction. To use an example from Rose and Dickson (1987): "If at least one cue provides information that is inconsistent with the other available cues, the credibility of the bargainer will be damaged. For example, if a bargainer is inconsistent in his verbal communications, sometimes tough and other times soft, the degree of consistency between the message behavior and any particular concession will be high when the concession is small (large) and the message is tough (conciliatory) and low when the concession is large (small) and the message is tough (conciliatory)."

A question which must be answered concerns the factors, if any, which mediate the effects of behavioral consistency on negotiating behavior. One factor which has received considerable attention in the bargaining literature is interpersonal trust (Deutsch 1958; Loomis 1959; Kimmel et al. 1980; Pruitt 1981). In general,

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high levels of mutual trust are associated with joint problem solving and integrative bargaining behavior. While the development of an atmosphere of mutual trust in a negotiation does not guarantee joint problem-solving, the deleterious effects of a lack of trust are well established. Low levels of trust are likely to produce negotiations which are distributive in nature, characterized by aggressive behavior and high levels of conflict (Lewicki and Litterer 1985). Recently, Schurr and Ozanne (1985) reported the results of an experiment in buyer-seller negotiations in which subjects' expectations of the trustworthiness and toughness of their hypothetical suppliers were manipulated. Expectations of the seller's trustworthiness were shown to moderate the effects of the seller's tough bargaining behavior on subjects' concessions and the likelihood of reaching agreement. Their findings suggest that a tough bargaining stance is likely to benefit the negotiator only to the extent to which his partner perceives him to be trustworthy.

Bargainers who are consistent in their behavior should be viewed as being more trustworthy than inconsistent bargainers; and, therefore, the credibility of the signal conveyed by their behavior should be increased. This effect of cue consistency on perceptions of trustworthiness is based partly on the fact that consistent bargainers behave in a manner which is congruent with their verbal communications while inconsistent bargainers do not. A negotiator who claims to be unable to make further concessions on one bid, but then makes a concession on the next bid suffers from diminished trustworthiness. This leads directly to the following hypotheses:

- H1: Bargainers exposed to behavioral cues from their negotiating partners which consistently signal a soft-to-tough direction to their behavior will perceive the seller to be more trustworthy than those facing inconsistent negotiators.
- H2: Bargainers who perceive the seller to be more trustworthy will concede more than those who perceive the seller to be less trustworthy.
- H3: Bargainers exposed to behavioral cues from their negotiating partners which consistently signal a soft-to-tough direction to their behavior will concede more than those facing inconsistent negotiators.

Method

Experimental Design: The between-subjects design employed in this study was a simple one with only one factor, relative cue consistency, operationalized at two levels, low and high. In the low cue consistency condition (LOWCON), the programmed seller took a random amount of time to make random concessions and send messages of random toughness. A pattern of decreasing concessions, soft-to-tough messages, and increasing deliberation time comprised the high consistency treatment (HIGHCON).

Three behavioral cues were manipulated to construct the consistency conditions of interest in this research: (1) the pattern of concessions, (2) the

deliberation time between bids, and (3) the toughness of the messages used. The selection of the most theoretically interesting levels of the independent variables was a difficult task. At this early stage of our investigation of the effects of cue patterns on bargaining behavior and impressions of the actor, it was deemed advisable to test patterns representing opposite extremes of consistency. Thus, our choice of very consistent and very inconsistent patterns was intended to establish the endpoints of possible inductions of behavioral consistency. The question of how much inconsistency in behavior is enough to undermine the effects hypothesized above is an interesting one worthy of future research.

The extent to which any two of the cues were consistent with one another is an empirical issue which is not addressed in this research. Most problematic is the relationship between the deliberation time pattern and the other two cues. Arguments could be made supporting each of three positions regarding this cue. First, one could argue, as we do, that increasing deliberation time is consistent with soft-to-tough concession and message patterns because it signals an increasing reluctance to concede. On the other hand, it is also possible to interpret decreases in deliberation time as more consistent with a hardening of bargaining stance. This is plausible because a bargainer who has reached his/her limit no longer need deliberate over the next concession since no concession is possible. Finally, it is also plausible that deliberation time patterns, in themselves, provide no information concerning changes in a bargainer's stance. From this perspective, the time cue would be irrelevant to a bargainer's assessment of his partner's behavioral consistency. In general, little is known about what negotiators infer from their partners' behavioral signals. Although in this study we were only concerned with inducing differences in bargainers' perceptions of their partners' overall behavioral consistency, the information value of cue patterns is also a topic worthy of future research.

Concession Pattern: With these goals in mind, two different types of concession patterns were chosen for pretesting: (1) random concessions and (2) a pattern of non-linear, decelerating concessions (similar to Druckman et al. 1972). The concession patterns used are described in Table 1. A very important issue concerns the contingent or non-contingent nature of the programmed concessions. One approach would be to make each concession in all conditions contingent on a previous concession on the same turn by the subject bargainer. It could be argued that this restriction is necessary in order to avoid unilateral forfeiture of profits by the programmed opponent. On the other hand, requiring all programmed concessions to be contingent may drastically reduce the effectiveness of the experimental manipulations by making the behavior patterns difficult or even impossible to perceive. Given the goals of this research, the latter outcome would be disastrous. The question of how subjects respond to concession patterns is an empirical one. There was no *a priori* reason to assume that a substantial number of subjects would simply sit back and watch the opponent concede without reciprocating. For these reasons a non-contingent concession pattern was used.

The programmed seller opened the negotiation with the same tough initial bid in each condition. This initial bid (\$2400) is tough because it is \$400 above the buyer's break-even price. The non-linear, decelerating

concession pattern was derived by decreasing the size of the concession by one third on each turn. The non-linear, decelerating pattern starts with a large initial concession then decreases the size of further concessions at an increasing rate (soft to tough). This strategy should clearly signal a settlement point arrived at asymptotically through the pattern of concessions. In the other concession condition, the size of the concessions was deliberately constructed so as to avoid signalling a settlement point with a pattern.

**Table 1
Concession Patterns**

	Decreasing Concessions		Random Concessions	
	Bid	Offer	Offer	Concession
1	2400	0	2400	0
2	2100	300	2373	27
3	1900	200	2173	200
4	1766	134	2113	60
5	1676	90	1979	34
6	1616	60	1976	3
7	1576	40	1958	18
8	1549	27	1946	12
9	1531	18	1646	300
10	1519	12	1641	5
11	1511	8	1633	8
12	1506	5	1632	1
13	1503	3	1592	40
14	1501	2	1502	90
15	1500	1	1500	2

In order to avoid confounding the concession patterns with the total amount conceded, the total amount conceded was held constant in all conditions. One way to do this is to end each negotiation after the same number of bids (Yukl 1974a,b). The number of bids should be sufficiently large to permit the subjects to discern the pattern of cues presented yet small enough to ensure that all sessions end simultaneously with either an acceptance of the subject's latest offer by the programmed opponent or a rejection of that offer for an external alternative. An alternative to this unrealistic constraint would be to allow the bargainers to finish the exercise subject to some time or number of bids constraint (Smith et al. 1982). The hypotheses concerning the effects of consistent behavioral cues on bargaining behavior and outcomes could then be tested using data up to the last turn on which *all* bargainers are still involved in the interaction. This method would permit examination of the effects of the various behavior patterns on the failure to reach agreement and actual outcomes. However, it could also introduce an element of time pressure to all conditions, the importance of which would depend on the length of time allowed for the negotiation. Under conditions of high perceived time pressure, bargainers have been found to make larger and more frequent concessions as the deadline nears both in laboratory experiments and in actual negotiations (e.g. labor negotiations) (Pruitt & Drews 1969; Chertkoff & Esser 1976; Raiffa 1982). This effect is moderated by the importance of reaching an agreement (i.e. the availability of alternatives to agreement within the negotiation).

As a compromise, the programmed seller made a maximum of 15 predetermined bids. If agreement was not reached after the fifteenth bid, the negotiation ended

with the programmed seller indicating to the bargainer that it was accepting an alternative offer outside the negotiation. When the seller withdrew from the negotiation, subjects were compensated as if they had accepted their outside alternative as well. The 15 bid maximum, while admittedly lengthy, was selected in order to ensure that the negotiators would have sufficient time to observe and to interpret their partners' behavioral signals. Subjects were not told prior to the negotiation that there was a 15 bid limit.

The outside alternative provided to the bargainers was designed to be acceptable, but not very attractive. It was expected that subjects would perceive a moderate degree of pressure to reach agreement within the negotiation. The effects of this pressure might vary systematically across conditions if the amount conceded by the programmed seller were not held constant. Obviously, tough strategies are made more effective when one's bargaining partner feels compelled to reach an agreement. Since the amount conceded by the program was held constant in these studies, the only *systematic* effect on subject concessions should be related to the nature and consistency of the behavioral cues provided in the interaction.

Deliberation Time Pattern: The amount of time used by the programmed opponent between bids was varied in two levels: (1) an increasing pattern and (2) a no-pattern, randomized condition. Deliberation time was measured from the time the bargainer received a bid until the instant the counter-bid was made. The increasing pattern began with a 15 second deliberation time and ended with a delay of 119 seconds. The total deliberation time was held constant across conditions. Table 2 lists the deliberation time patterns.

Message Pattern: Two levels of communications were manipulated. In one condition the toughness of the messages sent by the programmed bargainer was increased on each turn. In the second condition the communications were randomly ordered in order to avoid creating a pattern. The message patterns used by the programmed seller are shown in Table 3. This manipulation required exploratory research in order to ensure that actual differences in the toughness of the messages were observable from one bid to the next in the increasing-toughness condition. Preliminary evidence was gathered by asking subjects to assume the role of a bargainer who has just received a particular

**Table 2
Deliberation Time Patterns**

After Bid Number	Increasing Deliberation Time	Random Deliberation Time
1	15 seconds	59 seconds
2	17	105
3	20	24
4	24	42
5	29	29
6	35	92
7	42	80
8	50	20
9	59	69
10	69	15
11	80	119
12	92	17
13	105	35
14	119	50

Table 3
Message Patterns

Soft-to-tough Message Pattern

1. I'm sure we can reach a mutually satisfactory agreement.
2. I'm sure you'll think this deal is fair.
3. I think my offer is fair.
4. I think my offer is very fair.
5. I've made a fair offer, now it's your turn.
6. Look, I'm sure this is a fair deal.
7. Clearly, my offer is fair to both of us.
8. Come on now, this offer is more than fair.
9. You have to consider my firm's needs as well as yours.
10. You must concede further if you want to reach agreement.
11. Remember, I have another buyer that I can sell to.
12. Your proposals are not acceptable; you'll have to do better.
13. Accept this offer or I'm very likely to sell to another buyer.
14. I can't give any more.
15. This is my final offer; take it or leave it.

No-pattern Messages

1. I think my offer is fair.
 2. Your proposals are not acceptable; you'll have to do better.
 3. I'm sure we can reach a mutually satisfactory agreement.
 4. Clearly, my offer is fair to both of us.
 5. You have to consider my firm's needs as well as your's.
 6. I've made a fair offer, now it's your turn.
 7. You must concede further if you want to reach agreement.
 8. I'm sure you'll think this deal is fair.
 9. I think my offer is very fair.
 10. I'm sure we can reach a mutually satisfactory agreement.
 11. Come on now, this offer is more than fair.
 12. Look, I'm sure this is a fair deal.
 13. I think my offer is fair.
 14. You have to consider my firm's needs as well as your's.
 15. Clearly, my offer is fair to both of us.
-

message from a bargaining partner. Subjects were asked to judge the toughness of each message and the likelihood that a bargainer sending such a message would make further concessions on subsequent bids. The ordering of the messages suggested by this admittedly imprecise method was used to construct the initial message patterns which were later validated in the context of an actual negotiation.

The Bargaining Simulation: Subjects assumed the role of buyer in a purchasing negotiation. The seller's role was played by a programmed opponent using an interactive software program on micro-computers. (See Clopton 1984 and Schurr and Ozanne 1985 for similar approaches.) Subjects were told that they would be bargaining against each other over the price of a commodity industrial chemical called "Dexene". Use of a commodity is important to the external validity of the exercise since subjects only bargain over price (the

quantity to be purchased is assumed to be fixed). In addition, it was vital to the internal validity of the experiment that the subjects believe that they were actually bargaining with a live opponent. For this reason every effort was made to enhance the mundane realism of the negotiation and its setting.

The negotiations were held in several micro-computer labs with approximately ten subjects participating in each session. The number of participants in a given session was deliberately kept small in order to ensure that subjects could be isolated physically from each other. Subjects were told that they were participating in a test of negotiating skill. The most important objective of the instructions provided to the subjects was to convince them that they would actually be negotiating with a real opponent. Subjects were allowed to send written, one-line messages of their own to the seller during each turn but were not allowed to pose questions. These messages were chosen by the subjects from a list of fifteen messages that were identical (except for references to buyer or seller) to those sent by the programmed seller.

Subjects were given two incentives to maximize their outcomes in the negotiation. All subjects were told that they would receive a variable amount of course credit for participating dependent on performance in the negotiation. (In fact, all subjects received the same amount of credit.) A monetary reward was allocated to subjects also based on their performance in terms of the settlement price. To avoid deadlocks arising because the bargainers become overly zealous in pursuit of a reward, subjects were given an alternative price available from a vendor external to the negotiation which was automatically accepted if the negotiation ended without a settlement. This price was not a very favorable one for the buyer (\$1800), and thus if accepted, minimized the reward the bargainer could earn. The price also provided the bargainers with a point of comparison against which to evaluate the seller's offers. Subjects were given no information concerning the opponent's payoff schedule or reservation price.

After extensive pretesting and adjustment of the manipulations, this experimental procedure provided the subjects with a stimulating and realistic bargaining exercise. While a lot of time and effort was invested in enhancing the mundane realism of the experimental setting, the rewards in the form of more motivated subjects and more valid responses made these efforts worthwhile.

Results

Forty-six senior, undergraduate business students participated in the negotiation. One subject in the consistent cue condition and two subjects in the inconsistent cue condition had to be dropped from most of the analyses, one due to her error (accidentally withdrawing from the negotiation by pressing the wrong key) and two due to a bug in the bargaining program (detected in the first session) which caused a premature ending of their negotiation. Final cell sizes were 21 and 22 for HIGHCON and LOWCON, respectively.

Manipulation Checks: Evidence of the successful operationalization of the cue patterns is provided by subjects' responses to several scales designed to measure subjects' perceptions of the cue patterns. Based on each cue (i.e. concessions, messages, and deliberation time), subjects were asked the extent of their agreement with statements describing the seller as becoming more

reluctant to concede and tougher as the negotiation proceeded on a 7-point scale anchored by strongly disagree/strongly agree. In addition, subjects were asked the extent to which they agreed that the seller had taken more time to deliberate late in the negotiation than early on the same 7-point scale. Table 4 summarizes the treatment means for subjects' responses to each of these seven point scales anchored by strongly disagree/strongly agree. All of the contrasts between HIGHCON and LOWCON are significant at $p < .01$, and the mean differences are in the expected directions. As expected, subjects exposed to a consistent seller perceived the seller to be tougher, more reluctant to concede, and to deliberate longer as the negotiation progressed. No mean in the inconsistent cue condition is higher than the scale midpoint of four, nor is a mean in the consistent cue condition lower than the scale midpoint.

Table 4
Pattern Recognition Scale Means*

Measure	Consistent Cues	Inconsistent Cues
1. message pattern - reluctance to concede	5.25	3.73
2. message pattern - tough stance	4.91	3.36
3. concession pattern - soft-to-tough	5.17	3.55
4. concession pattern - reluctance to concede	5.75	3.95
5. time pattern - reluctance to concede	5.33	3.73
6. time pattern - soft-to-tough	5.00	3.50
7. time pattern - short-to-long	5.13	3.41
8. overall consistency	5.42	3.82

* All mean differences are significant at $p < .01$.

Further evidence concerning the validity of the consistency manipulation was provided by subjects' responses to the following item. Subjects were asked, "How consistent was the seller's behavior? In other words, were all aspects of the seller's bargaining behavior such as the pattern of concessions, the time needed to make an offer, and the messages sent consistent with each other?" Subjects' responses were recorded on a 7-point scale anchored by "not at all consistent/very consistent". Analysis of variance revealed that subjects in the two conditions perceived a clear difference in the over-all consistency of the cues provided by the seller as measured by the consistency scale. HIGHCON subjects perceived the seller to be more consistent than LOWCON subjects ($m = 5.42$ vs. 3.82 , $p < .01$).

Beliefs About the Seller: It was expected that bargainers in the consistent cue condition would view the seller as more trustworthy than bargainers exposed to inconsistent behaviors. Fourteen, 7-point semantic differential scales were used to evaluate subjects' beliefs about the seller. Subjects were asked to rate the seller on the following dimensions: cooperative/ competitive, deceptive/frank, strong/weak, skilled/unskilled, thoughtful/thoughtless, wise/ foolish, honest/dishonest, reasonable/unreasonable, intense/mild, generous/selfish,

tough/easy, professional/amateurish, trustworthy/untrustworthy, and good/bad.

Table 5 summarizes the results of a principal components analysis of these measures. Two components were identified which accounted for approximately 60% of the variance in subjects' responses. Items with loadings of at least .50 were interpreted as indicators of a latent factor. The loading of the good/bad item did not load heavily on either factor, suggesting the presence of a separate evaluative dimension. Cooperation, strength, skill, wisdom, intensity, generosity, toughness, and professionalism loaded on the first component. Deception, thoughtfulness, honesty, reasonableness, and trustworthiness loaded on the second component. The former was interpreted as toughness, and the latter was interpreted as trustworthiness. Responses to the items comprising each component were then summed. Reliability and correlation coefficients were computed on these indices. Cronbach's alpha was .74 and .91 for the trustworthiness and toughness scales, respectively. The two components were not significantly correlated ($r = -.115$, $p = .44$). Differences between treatments on these summated scores were tested using analysis of variance. As expected, cue consistency had a significant effect on subjects' perceptions of the seller's trustworthiness ($F = 7.39$, $p < .01$). The consistent seller was seen to be more trustworthy (mean = 16.42) than the inconsistent seller (mean = 19.77), with a lower score indicating greater trustworthiness. No differences in subjects' perceptions of the seller's toughness were expected or found ($F = .63$, $p = .43$). The means for the consistent and the inconsistent conditions were 32.13 and 34.27, respectively, with a higher score indicating a greater toughness.

Table 5
Rotated Factor Pattern For Evaluative Scales ^a

Measure	Factor 1 ^b	Factor 2
cooperative/competitive	-0.803	0.295
deceptive/frank	-0.141	-0.502
strong/weak	0.902	-0.014
skilled/unskilled	0.878	0.129
thoughtful/thoughtless	0.062	0.695
wise/foolish	0.768	0.216
honest/dishonest	0.112	0.710
reasonable/unreasonable	-0.408	0.649
intense/mild	0.690	-0.164
generous/selfish	-0.627	0.029
tough/easy	0.880	-0.118
professional/amateurish	0.681	0.299
trustworthy/untrustworthy	0.319	0.837
good/bad	0.486	0.399
Variance explained	5.468	2.803

^a principal components analysis with varimax rotation
^b standardized factor loadings

Trust and Yielding: Bargainers who attributed greater trustworthiness to their partner were expected to yield more in the negotiation. Only limited support for this proposition was found by examining the correlation between subjects' perceptions of the seller's trustworthiness and their total concessions ($r = -.26$, $p < .09$). Further evidence concerning the strength and direction of the relationship between trust and yielding was obtained by dividing the sample into two groups

based on a mean split of the trust scale. Subjects below the mean were categorized as high trusters while those above the mean were categorized as low trusters. This categorical variable was then used as a classification variable in analysis of variance. The results of this analysis indicated that high trusters conceded significantly more on average than low trusters (\$549 vs. \$372, $F=4.14$, $p<.05$). While no inferences concerning causality are appropriate based on these analyses, the conclusion that trust and yielding are positively related received some support. (See Schurr and Ozanne 1985 for a direct manipulation of trust.)

Effects on Bargaining Behavior: It was anticipated that consistent cues would be associated with greater yielding and fewer deadlocked negotiations. The results of this experiment provided support for these propositions. Subjects in HIGHCON made a higher final offer than subjects in LOWCON: \$1471 vs. \$1319 ($F=3.04$, $p<.05$, one-tailed test). In addition, bargainers faced with consistent cues were more likely to reach an agreement with the seller in the negotiation than subjects whose sellers' were inconsistent. Sixty-seven percent of the consistent cue group reached agreement while only 41% of the inconsistent cue subjects settled within the negotiation. This difference was significant ($t=1.72$, $p<.05$, one-tailed test). This is an important result since no bargaining strategy is effective if it greatly decreases the likelihood of reaching an agreement.

Discussion

One important outcome of this experiment was the clear demonstration that subjects are able to recognize accurately the cue patterns manipulated in this research. This was a concern because cue consistency theory places heavy demands on the ability and motivation of negotiators to perceive and process the complex cues provided by the behavior of their partners. This study provided strong evidence that even inexperienced negotiators are able to discern these patterns. The study also demonstrated that subjects were able to use these cue patterns to form an accurate impression of the seller's behavioral consistency as required by the theory.

As expected, consistent bargainers were perceived to be more trustworthy than behaviorally inconsistent bargainers. Subjects who believed the seller to be more trustworthy also tended to concede more. While no direct causal link between attributions of trustworthiness to the seller and bargaining behavior was demonstrated in this research, these results are certainly supportive of the proposition that attributions mediate the effect of one bargainer's behavior on the behavior of his bargaining partner. The findings also support the conclusions of Schurr and Ozanne (1985) that beliefs about the seller's trustworthiness mediate the impact of a seller's tough behavior on the behavior of a buyer. The prediction that consistent behavior would affect subjects' bargaining behavior was supported as well. In particular, it was found that subjects faced with a consistent seller tended to reach an agreement more often than subjects faced with an inconsistent seller. Similarly, the final price offered by subjects differed significantly as a function of the seller's behavioral consistency. If a key to skilled, competitive bargaining is awareness of the other party's strategy and behavioral signals, then it is reassuring that the subjects passed this test. What is not so reassuring is that some subjects also displayed the capacity to be deceived by a skilled partner who used a planned

response pattern to create impressions of trustworthiness and reasonableness.

Implications for Consumer Research

Recently, consumer researchers have demonstrated a growing interest in studying influence in sales interactions from an information processing perspective (e.g., Sujon, Bettman, and Sujon 1986). This research should be considered one part of this broader investigation. This initial test of the effects of cue consistency on bargaining attributions and behavior suggests that behavioral consistency may be an important vehicle for influence in buyer-seller negotiations. In the future, consumer researchers should check the robustness of these effects by varying; (1) the types of behavioral cues provided in the interaction, (2) the context of the negotiation, and (3) the length of the negotiation. The importance of behavioral consistency as input to attributional processes in bargaining should be further examined by testing the effects of behavioral consistency on the latent structure of attributions (i.e., causal dimensions such as locus of causality, stability, or controllability) which were proposed in the paper by Rose and Dickson (1987). This research has demonstrated main effects of cue consistency on impressions of trustworthiness and bargaining behavior. Future research should be directed toward answering the more complex and, perhaps, more interesting question of when such effects are likely to occur. Individual difference variables such as interpersonal orientation, motivational orientation, and negotiating experience should all contribute to a bargainer's sensitivity to the behavior of his partner and to his susceptibility to interpersonal influence. Our knowledge of the roles played by behavioral consistency and attribution in determining negotiation behavior will remain rudimentary until the interactions of these variables with differences in individuals and situations are better understood.

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Attribute Deficiency Segmentation: Measuring Unmet Wants

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Abstract

Three approaches are discussed that are designed to measure consumers' unmet wants/needs/expectations directly at the individual level: expectancy confirmation, ideal point expectancy value model, and value percept disparity. All three methods yield a vector of discrepancy scores for each respondent on each attribute, and these discrepancies (deficiencies) can be used to identify groups of respondents having similar profiles of unmet wants. The value percept disparity approach yielded 4 deficiency segments for a pet food product.

Background

Since the introduction of the market segmentation concept (Smith, 1956), a wide variety of approaches to segmenting markets have been proposed. Wilkie (1971) suggested that these various approaches could be classified into two major types: "empirical stream", based on characteristics of buyers or users, and "product stream", based on characteristics of the product or service itself, or on usage rates or patterns, or on important product attributes, or on situations or occasions of use. In a later review article, Wind (1978) used different terms in referring to this same dichotomy: "general customer characteristics" (for empirical stream) and "situation-specific customer characteristics" (for product stream).

This paper will present a new form of product stream segmentation that is based on *perceived deficiencies* in product/service attributes. Earlier work in attribute-related segmentation has focused on the *relative importance* of key attributes, in order to identify those the consumer wants most. But as Ries and Trout (1986) point out, "Knowing what the customer wants isn't too helpful if a dozen other companies are already serving the same customer's wants". This suggests that a more useful approach than simply measuring attribute importance might be to measure directly the extent of *unmet needs* in the most important product attributes. We will call these unmet needs "deficiencies". If these deficiencies can be measured at the individual level, consumers can be segmented into groups that have homogeneous patterns of attribute deficiencies. The resulting groups can be referred to as "deficiency segments". Marketing strategies aimed at reducing or eliminating sizeable deficiencies in important attributes for a target deficiency segment could be expected to have a meaningful impact on product/service/brand preference as well as purchase.

Measuring Attribute Deficiencies

Researchers have used several approaches to measuring deficiencies in product/service attributes. Those most frequently used can be classified into one of three types: expectancy confirmation (EC), ideal point (IP), and value-percept disparity (VPD).

Expectancy Confirmation

Research on consumer satisfaction/dissatisfaction (CS/D) has been dominated by the measurement of discrepancies between consumer expectations and the perceived performances of a product/service. Some studies have measured these discrepancies at the level of

overall or total performance only (Olshavsky & Miller, 1972; Anderson, 1973; Westbrook & Oliver, 1980; Cardozo, 1965; Cohen & Goldberg, 1970), while others have looked at several component attributes or features in addition (Pfaff, 1977; Morris, 1977; Hempel, 1977; Oliver & Linda, 1980).

Researchers have used a variety of approaches to measure expectancy confirmation at the specific attribute level. Trawick and Swan (1980) distinguish between *inferred* and *perceived* disconfirmation. Inferred disconfirmation is measured by asking buyers prior to usage to rate the level of each attribute they expect the product/service to have, and then to rate attribute performance after usage. The difference between before and after ratings constitutes inferred disconfirmation. In contrast, perceived disconfirmation obtains both of these measurements after product usage and therefore respondents are asked to recall their anticipated levels of attribute performance. To address some conceptual problems with these approaches, Oliver (1977, 1980a) used "better than expected - - - - worse than expected" scales as measures of satisfaction and other post-exposure cognitions. Of course, some investigators have used only post-usage measures of satisfaction, but these do not offer any deficiency or discrepancy measures and therefore are not useful for purposes of the present study.

Regardless of how they are measured, discrepancies between expected and observed performance at the attribute level can be used as inputs to clustering programs that identify relatively homogeneous groups of respondents based on their patterns of discrepancies. The general expectancy confirmation model is (following the notation of Swan and Martin, 1980):

$$S = \sum_{i=1}^n (A_i - \text{PRED}_i) \quad (1)$$

where S= satisfaction; A_i = after-usage subjectively experienced attribute level; PRED_i =expected value of the attribute level measured prior to usage; n= number of salient attributes. These differences produce a vector of difference scores for each respondent, and respondents can then be grouped using either hierarchical or partitioning clustering technologies. This same type of model could also be used for discrepancies between ideal and observed performance at the attribute level.

Ideal Point

The concept of ideal points was first mentioned by Coombs (1964, p. 8-9) and was later introduced into marketing as a part of multidimensional scaling (MDS) and related technologies (see Green and Carmone, 1968; Carroll, 1972; Coombs & Avrunim, 1977). These technologies construct idiosyncratic perceptual spaces based upon direct similarities judgments among objects such as brands of products/services. Then one or more ideal points (or vectors) for each individual is inserted into these spaces using a variety of algorithms (see Kamahura and Srivastava, 1986 and references). The notion of ideal points was then extended into multiattribute attitude models in the form of an "ideal-

point" version of the general expectancy-value model. This model has the form:

$$A_o = \sum_{k=1}^n W_{ik} |B_{ijk} - I_{ik}| \quad (2)$$

where A_o = overall attitude toward an object (product/service/brand); W_{ik} = importance weight assigned by individual i to attribute k ; B_{ijk} = individual i 's rating of brand j on attribute k ; I_{ik} = the individual's ideal point on attribute k . If a single product or brand can be specified (e.g., brand preferred, brand bought last, brand used most often), then a vector of difference scores can be constructed for each individual based on the discrepancies between brand attribute ratings and ideal points. These vectors can then be input into a clustering algorithm in the same manner as for the expectancy confirmation discrepancies model discussed earlier.

Value-Percept Disparity

In a recent article, Westbrook & Reilly (1982) proposed an alternative to the expectancy confirmation model for measuring consumer satisfaction. It is based on the value-percept disparity model first proposed by Locke (1967, 1969) in the context of measuring job satisfaction. This model proposes that satisfaction is based on the discrepancy between perceptions (beliefs) of an object/action and a person's values, stated in terms of needs, wants or desires. The greater the value-percept disparity, the lower the satisfaction, and vice versa.

Translating this model into the marketing context, Westbrook and Reilly (p. 257) state, "What is expected in a product, however, may or may not correspond to what is wanted or desired in that product." They suggest that satisfaction may be more a function of performance relative to aspirations than to expectations. Comparisons of these two models using LISREL failed to confirm the superiority of the value-percept disparity model as compared to expectancy confirmation. However, their study asked respondents to list as many of their "needs" (rather than wants or desires) in an automobile as they could, and then to rate the extent to which their own automobiles met these needs, using a 7-point semantic differential scale anchored with "Provides for less than my needs" (7) and "Provides exactly what I need" (1).

Myers (1976, 1977) took a different approach to operationalizing the value-percept discrepancy model. In the context of searching for new product/service ideas, he argued that what people "want", or would like to have, is more important than what they "expect" from products or services now on the market. Focusing on the latter tends to restrict respondents to thinking only within the existing array of products and services rather than on new ones, or on major improvements in existing ones, that they would greatly prefer. The primary purpose of his study was to measure the extent of *deficiencies* in each of dozens of cleaning product attributes. He asked respondents to rate the last product actually used in terms of both how much they recalled wanting each attribute and how much they actually got that attribute from the product they used (using a 4-step equal-interval verbal scale). If this approach were used to measure consumer overall satisfaction with a particular product/service, the model would have the following form:

$$DS = \sum_{k=1}^n W_{ik} |W_{ik} - G_{ijk}| \quad (3)$$

where DS = dissatisfaction; W_{ik} = wanted rating of individual i on attribute k (similar to importance ratings); G_{ijk} = got rating of individual i on attribute k for product/brand j (similar to beliefs ratings). The greater the discrepancies between wants and gets, weighted by the importance of each attribute, the greater the consumer's overall dissatisfaction with a particular product/brand.

Using this approach, it is possible to probe for respondents' potential interest in product benefits/features that are not offered by any existing brands in a category (e.g., an ingredient in canned dog food that kills fleas and ticks systemically, or a contraceptive). This makes it easily possible to include several "mini concept test" statements among the usual assortment of product attribute descriptors rated by respondents. At the same time, deficiencies can also be measured in each of dozens of existing features/benefits/imagery attributes for products/services now on the market.

Measuring Deficiencies

Despite major differences in the primary objectives of the three models discussed above, they all can be used to measure discrepancies between perceived actual product/service performance and some relevant reference point, at the individual level and for each product/service attribute separately. These discrepancies can be considered alternative ways of measuring expectancies/needs/wants that are not being met to the extent desired by a respondent; that is, deficiencies. Segmentation based on these deficiencies is a way, and it may be the most direct way, of locating people that would respond to specific changes in any element of the marketing mix.

Study Objectives and Methodology

The purpose of the present study was to explore the potential value of deficiency segmentation using the general category of consumer packaged goods as a vehicle. Thus, any one of the three major attribute deficiency measurement approaches discussed above could have been used. Since the primary objective of the present study was to develop customer-based ideas for new types of pet food products, the value-percept disparity model was selected. This approach gave respondents the opportunity to indicate their unmet wants or desires in each of a large number of attributes that could be used to describe the benefits or ingredients in products/brands in the pet food category, including some benefits/ingredients that were not available in any existing commercial products.

The Sample

A convenience sample of 302 respondents was intercepted in shopping malls in 5 cities nationwide. Each respondent was qualified as a pet owner who had the primary responsibility for deciding what their pet would eat for main meals. A number of questions were first asked about each pet (e.g., type or breed, size, age, sex, health condition), followed by previous purchases of different types and brands of pet foods. This was followed by questions about awareness of the various

brands and types, feeding patterns, purpose of ownership, and the like.

Measurement

Each respondent was then presented a list of 54 attributes that could be used to describe both existing and potentially desirable characteristics of the particular type of pet food of interest (e.g., contained lots of fiber, extremely high quality ingredients, a well-known brand, was very crunchy). Respondents were asked to remember the *last time* they served this general type of food to their pet and to indicate how much they both wanted and got each of the attributes at that occasion. Ratings were given on a 10-point scale (10=extremely; 1=not at all).

The value-percept disparity was measured by subtracting got from wanted ratings, yielding a vector of 54 discrepancy scores for each respondent. Of course, discrepancies could be either positive or negative (negative in cases where a respondent got more of a particular attribute than he/she wanted.) Negative deficiencies are considered by this writer as being equally important and meaningful as positive deficiencies. Negative deficiencies can mean one of two things: 1) the respondent got an attribute more than he/she wanted it (e.g., sweetness, thickness, aroma, thrills, excitement) and did not appreciate this, or 2) the respondent got more of a desirable attribute than he/she wanted simply because he/she did not want it very much (e.g., great tasting food, nutrition, styling). In either case, it is the *pattern* of deficiencies that defines segments, and these patterns should be based on negative as well as positive deficiencies. Of course, the various attribute deficiencies should be related by the underlying constructs they are measuring.

Vectors of discrepancies were input into a k-means (disjoint partitioning) clustering algorithm, and solutions were obtained for 2,3,4,5, and 6 clusters.

Analysis

In any kind of multivariate segmentation analysis, the most difficult problem is that of deciding how many segments exist. This might be done on either a theoretical (a priori) or an empirical (a posteriori) basis. A priori specification of segment numbers should be done only when based on a solid theoretical foundation, or at least on prior investigation designed to provide some form of market structure related to the variables of interest. However, most segmentation studies conducted by business firms do not meet either of these conditions, and of course this is the primary reason for conducting such a study.

Since one of the objectives of the present study was to see how many (if any) deficiency segments might exist, an a posteriori determination of segment membership was necessary. Ideally, the major packaged software clustering programs would provide an a priori estimate as to the number of clusters that are likely to exist in any data set. None of them appear to offer such an option, and also there is no general agreement as to the best solution to this problem (see Everitt, 1979, 1980). This is true for both hierarchical and partition clustering. However, a recent simulation study (Milligan & Cooper, 1985) using 4 hierarchical clustering methods provides some guidance for researchers using this technique.

Therefore, an investigator must use some combination of the following criteria for deciding a posteriori how many clusters best describe the data: 1)

trends in F-ratios of the differences among means of the various clusters, 2) balance among the numbers of cases in the clusters, 3) patterns among the discrepancies in a cluster, in terms of logical consistency, 4) size of a particular cluster having a deficiency pattern of interest, and 5) number (and size) of segments that could be addressed by a business firm with finite resources.

Results

Inspection of the 5 clustering solutions using these criteria led to the selection of the 4-cluster solution as offering the best opportunity for company implementation. All of the 54 attributes differed among the 4 clusters at the $p < .01$ level of significance or beyond except 3. (These were at the .06, .11, and .53 levels respectively.) The relative sizes of the 4 clusters are shown in Table 1. The reason why Cluster 2 showed such homogeneity (in terms of average distance of all cases from the centroid) was because respondents in this segment had deficiencies that were about the same as for the total sample on all but 5 of the 54 attributes.

Table 1
Relative Sizes of Segments in 4-Cluster Solution

Cluster	No.	%	Mean Distance*
1	39	13	13.2
2	142	47	7.0
3	60	20	15.0
4	61	20	10.5

* Average distance from centroid of each cluster to the cases in that cluster.

Cluster 1 was of particular interest because 1) nearly all deficiencies were at least slightly higher than for the total sample, 2) 2 of the highest deficiencies were among attributes that distinguished most among the clusters (with highest F-ratios), 3) the 4 attributes that distinguished most among the clusters (including the 2 mentioned earlier) all related to the same product aspect: texture¹. Taken as a group, these attributes were logically consistent, best separated the 4 clusters, had above-average deficiencies among members of Cluster 1, and were among the most important attributes driving customer satisfaction. These attributes and their respective F-ratios (reflecting mean differences among clusters) are shown in Table 2.

This segment also showed some clear differences from the others in terms of both "people demographics" (size, age, reason for purchase). All of these data gave a very clear profile of the wants and characteristics of Deficiency Segment 1. The company is now actively working on a product modification aimed specifically at the deficiencies perceived by this segment.

¹ This, as well as all statements in Table 2, are disguised, since this is a highly competitive market and the company is now working on product improvements based upon the actual desired attributes for this deficiency segment. However, all numbers in both Tables 1 and 2 are correct, and the disguised texture attributes were taken from the same study.

Table 2
Attributes Best Distinguishing Among 4 Clusters

Attributes	Total Sample Mean Deficiency	Cluster Mean Deficiency	F-ratio	p
Was chewy	2.68	5.41	152.38	.000
Contained lots of fiber	.87	5.97	151.52	.000
Had chunks of food in it	.98	4.79	96.83	.000
Appropriate texture for my pet	2.38	5.05	82.92	.000

Discussion

This study has shown that segmentation based on measured deficiencies in important product attributes is feasible and can lead to meaningful clusters of respondents who share similar patterns of unmet needs or desires. These deficiencies can be measured at the individual consumer level in 3 ways: expectancy confirmation, ideal-point expectancy value, and value-percept disparity. The latter was selected for this study and was operationalized in a manner suitable for uncovering need-gaps in the market that could lead to improvements in existing pet food products or to entirely new product concepts.

While it might have been desirable to measure wants *prior* to the last time a particular pet food was served (rather than asking respondents to recall these wants later), such an approach requires two survey waves. The cost of this would be considered prohibitive in most commercial studies. However, most owners feed their pets a single main meal each day, and wants should be relatively stable from one day to the next in this context. Also, the fact that Trawick and Swan (1980) have shown that inferred and perceived disconfirmation were highly related ($r = .85$) in a study of fabric cleaners lends credence to the approach used in this study. This finding supports that from an earlier study by Oliver (1979).

There is also the problem of reliability when measuring wants and gets at different points in time. Oliver (1977, 1980) has criticized this approach on the grounds that expectation and disconfirmation scores are not independent of each other (there is often a slight negative correlation). To circumvent this problem he recommended a single scale administered only after product use (Worse than expected -- Better than expected). Prakash and Lounsbury (1982) proposed that the problem of the correlation of expectation and discrepancy scores could be due to very low reliabilities of the before - after difference scores. In a study of their own they found these reliability coefficients to be .46 for fast food hamburger restaurants and .19 for beer. All of this suggests that measuring all discrepancies only *after* product/service use, as in the present study, may well be superior to obtaining separate before-after ratings.

It is important to note that this study did not attempt to *compare* the effectiveness of the three types of discrepancy scores (EC, IP, VPD) in terms of explaining customer satisfaction or identifying deficiencies. Even though all 3 types look similar, they

tend to be used for different purposes and in different settings, but all of them can yield deficiency scores. Instead, the present study proposed a new approach to segmentation based on using only VPD discrepancy scores as a measure of unmet wants and needs. This approach appears to be especially appropriate for the objective of searching for new product/service ideas, but it is clearly applicable for other objectives as well.

Comparisons with Conventional Ideal Point Approaches

What do the discrepancy score approach discussed in this paper add to the conventional uses of an ideal point? Note that there are currently two such uses: 1) ideal point or vectors of importance overlaid on a perceptual map, 2) the ideal-point expectancy value model.

In the case of a perceptual map constructed at the *individual* level (using MDS or a related technology), attributes are usually represented by vectors rather than points (if they are represented at all). This makes it difficult to calculate attribute discrepancy distances directly. Also, these distances would have to be inferred based on a comparison of the distance of the ideal product/service from a specific attribute versus the distance of the same attribute from the brand used last or most often. This writer is not familiar with this or any other approach to measuring attribute discrepancies directly from perceptual maps that have been reported in the literature. Instead, discrepancies are usually measured in terms of the distance of each brand, taken as a whole, to the ideal brand.

In the case of the ideal-point expectancy value model, earlier in this paper this model was represented as one of the 3 alternative ways to measure attribute deficiencies directly. However, this model does not appear to have been used for this purpose in any studies reported in the literature, even though it could have been. Actually, very little of the research on multiattribute models has involved the use of a scaled ideal point for each attribute. One reason might be that some investigators have found it hard for respondents to specify any ideal point other than at the top of a scale. It may be that "wants" are considered by respondents to be more meaningful and easier to scale than "ideal" points, since the former are measures of *intensity of feeling* rather than some unrealistic, often unattainable point of perfection. The present study did not investigate these issues, however.

Deficiency Spaces

An extension of the work reported here would involve the construction of "deficiency spaces" based on the vectors of want-got discrepancy scores for each respondent. These would be input to a discriminant analysis program, which would produce some number of discriminant functions and canonical discriminant vectors. Each of the major brands could be positioned in terms of these functions, and the results could be represented in 2 or 3 dimensional space showing both brands and attributes. The result would be a deficiency space that looks very similar to a perceptual space created from brand descriptive (beliefs) ratings using discriminant analysis, but it would show the most prominent *deficiencies* associated with each of the major brands. A deficiency space might reveal a very different picture than a perceptual space, since there need be no real relationship between brand ratings and brand

deficiencies at the attribute level. It might also be much more actionable.

It is important to note the constraints placed upon deficiency scores by the magnitude of beliefs (i.e., got) ratings: the maximum possible deficiency score depends upon the degree of the beliefs rating. Thus, a belief rating of 8 on a 10-point scale could result in a maximum positive deficiency score of 2, whereas a belief rating of 1 might have a deficiency of up to 9 (such a score is occasionally obtained in practice). Therefore, there should be somewhat negative correlations between beliefs ratings and deficiency scores across all respondents and brands.

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Investigating the Experiential Dimensions of Product Evaluation

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Abstract

The study investigates the application of the Phenomenology of Consciousness Questionnaire (PCQ), an instrument which measures nine experiential dimensions of consciousness, to a product evaluation situation. Subjects with high and low levels of product experience evaluated one of two products (either one which is typically judged on a utilitarian basis or one which is typically judged on a hedonic basis), and reported how they experienced the evaluation situation, their attitude toward the product, and their behavioral intentions. The results suggest that including a measure of how consumers experience products can improve the relationship between attitudes and behavioral intentions, and in some cases even replace the traditional attitude measure.

Introduction

Recently there has been increasing dissatisfaction with the traditional models which have been used to examine and predict consumer behavior. These models have been based on the assumption that consumer decision making is primarily based on rational, cognitive processes (Peterson, Hoyer, and Wilson 1986). Thus, researchers have become interested in other factors influencing consumer decision making, including feeling, emotions, and experiences. This paper focuses on the experiential dimension of product evaluation.

Background

Most current models of the consumer product evaluation process are cognitively oriented. That is, they portray the consumer as forming product judgments largely on a conscious and rational basis. For example, Fishbein's (1975) model of attitude toward the object (A_o) has as its foundation consumers' beliefs about the object (b_i) and evaluation of those beliefs (e_i). The belief component is a cognitive factor. The evaluation of the belief represents the affective component. However, as it has been generally operationalized, this affective component has been largely treated as though it is based on a rational, cognitive evaluation of the beliefs. Petty and Cacioppo (1986) have argued that this type of general evaluation model fails to fully capture the purely affective component of attitude. Miller and Tesser (1986) contend that in many cases, behavior is not based on a general evaluation of the situation, but instead is contingent, to a greater or lesser degree, on the cognitive or affective component of attitude. That is, some types of buyer behavior may be more cognitively driven and other types may be more affectively driven.

In line with Miller and Tesser (1986), Hirschman and Holbrook (1981) have suggested that we need to consider an experiential factor in studying consumers' behavior. They suggest that consumer fantasies and subjective reactions to their general life experiences and to their product consumption experiences have an important influence on their behavior. From this perspective, ignoring the experiential dimension limits

our understanding of consumer behavior. For example, with regard to affect, they note that the information processing treatment of affect along a continuum of "like-dislike" only represents a very small subset of the emotions and feelings from the experiential view. This suggests that both marketing academics and strategists may want to consider the potential impact of the experiential dimension of attitude on consumer behavior.

In order to implement a more experiential approach to consumer behavior, it is necessary to find a way to measure how consumers experience their world. Very little effort in marketing has been directed toward this problem. However, Pekala and Levine (1981) have developed a methodology for mapping peoples' subjective experiences through the retrospective completion of a self-report inventory. They call the inventory the Phenomenology of Consciousness Questionnaire (PCQ).

The PCQ was developed as a phenomenological methodology for assessing and mapping the structure of consciousness with the idea that it might be used to determine the phenomenological parameters associated with any stimulus condition of interest. It was based on the work other researchers had done measuring states of consciousness (e.g., Battista 1978, Krippner 1972, Ludwig 1972, and Tart 1975, 1977) and resulted in a scale measuring nine dimensions using thirty-seven items. The authors conclude that "the thirty-seven items of the...PCQ cannot map all the nuances of subjective experience, [but that] it can do reasonably well in assessing nine major dimensions of consciousness" (Pekala and Levine 1981, p.44). This instrument provides a potential method of measuring how consumers experience products.

Thus, the central purpose of the current study is to perform an exploratory study to investigate whether the experiential dimension of product evaluation might be measured using the PCQ, and how it might help to understand consumers' attitude formation for both cognitively evaluated and affectively evaluated products.

Research Questions

Our proposal is to investigate consumer attitude formation for cognitively and affectively evaluated products using both a traditional model of attitude and the experiential dimension. There is no generally agreed on classification of products into cognitively or affectively evaluated ones. However, it would appear that in many circumstances, some product evaluations are based primarily on cognitive judgments about physical brand attributes (consistent with the Fishbein and Ajzen 1975 approach), while in other situations product evaluations are based primarily on phenomena such as the conditioning of affect, mere exposure, nonutilitarian consumption and use effects, and affective reactions to stimulus characteristics. These may be seen as utilitarian/cognitive and hedonic/affective based evaluations (cf. Batra 1986).

A variety of factors may influence whether a product will be evaluated based on a utilitarian or hedonic basis. For example, the visceral anxiety many

consumers have about shopping for and using new technologies may be a factor which causes consumers to use a more affectively-driven evaluation of the product. Of course, the degree of anxiety is expected to be less for consumers who already are experienced with the product than for those who have little product-related experience. This suggests experienced consumers might tend to exhibit more cognitively driven decision styles. On the other hand, it seems unlikely that consumers would have a similar fear of evaluating and shopping for low-tech products. Even those who have relatively little experience may feel no anxiety about this process.

Thus, several questions motivated this study:

1. Can an existing instrument developed in another field, for another purpose, be effectively used to measure how consumers experience products. In particular, are the dimensions the same? Does the instrument appear to have internal consistency? Does it work equally well for affectively and cognitively evaluated products and for consumers possessing varying levels of product-related experiences?
2. How does the inclusion of experiential dimensions affect the existing models of attitude? Does it improve the relationship between measures of attitude and measures of behavioral intentions?
3. Can one model of attitude apply equally well to understanding consumers' evaluations of *both* cognitively and affectively evaluated products?

Methodology

Subjects

Seventy-three undergraduates from a major Mid-west university participated in the study. Thirty-one of the subjects were pre-screened and selected based on their level of experience with computers (i.e., little computer experience versus substantial computer experience). The remaining subjects were exposed to the music treatment. Each group was exposed to a product usage situation for a computer (i.e., a cognitively evaluated product) or a music tape (i.e., an affectively evaluated product), and then asked to complete a set of scales measuring what they experienced during the usage situation and a set of scales evaluating the product. All subjects were recruited and participated strictly on a volunteer basis.

Products

A computer and a music tape were selected as the focus of the study for two reasons. First, these represent two distinctly different types of products. The computer is representative of the type of product which might typically be evaluated on a cognitive basis (i.e., based on the evaluation of product attributes). However, a significant portion of the population is often fearful of such a high-tech product, especially if they have only limited experience with the product. Such consumers may tend to use a more affective evaluation approach. On the other hand, from the consumer's viewpoint, a music tape is a non-threatening, low-tech product. Few consumers have a fear of listening to taped music. In an exploratory study of this nature, it seemed appropriate to use products which might produce maximally different results on the measurement scales. Secondly, both of these products are appropriate for the student subjects used. That is, many students use these two types of products and so it was possible to obtain students who had different levels of experience and interest in the two products.

To reduce the potential biasing influence of prior familiarity with the specific products being evaluated, a Compaq portable computer and a mood music tape were selected.

Study Procedures

Approximately 130 undergraduate students were given a screening questionnaire to evaluate their level of computer experience. Sixteen subjects who indicated a high level of computer experience and sixteen subjects indicating a low level were contacted to schedule a time when they could participate in the study. Only one student failed to keep the appointment, yielding a sample of 31 computer subjects. The same screening instrument measured level of experience with music tapes. Because the results indicated a small degree of variation in experience for this product compared to computers, a convenience sample of forty-one students from a marketing class were exposed to the music tape. The music tape treatment was performed in small groups of five to six people. These procedures for the two products were used as it was not possible to have more than one person use and evaluate the computer at a time, and it did not seem necessary to have individual exposure to the music tape. Prior to the experiment, all subjects read and signed an informed consent form.

In both cases the subjects were told that they would have a product usage experience, and be asked to evaluate that experience and the product itself. The administrators stressed that the subjects were to evaluate the computer itself, not the software; or the music tape itself, not the tape player.

A step-by-step instruction guide was created to lead the subjects through the computer evaluation experience. The guide had them insert two floppy disks, turn the computer on, load a word processing program, and type a brief letter. All subjects followed the same procedure, which took about five minutes. For the music tape, all subjects heard the same two minute section of the tape.

After the product usage experience, both groups were asked to fill out a questionnaire which contained a modified experiential measurement scale (described below), a set of product evaluation questions, and some demographic items.

Independent Variables

Product Type: As previously noted, the computer was selected as representative of products which usually require a cognitive evaluation. The music tape was selected to represent a non-threatening product, which would be evaluated on a more affective basis.

Level of Experience: Level of experience was judged by examining the subjects' responses to a series of questions in the screening questionnaire. To disguise the product category of interest, the screening questionnaire asked about cars, compact disk players, computers, and music tapes. Subjects were asked to indicate on a five point scale how interested they were in each product (no interest--extremely interested) and their degree of expertise with the product (I am a novice--I am an expert). They were also asked to indicate which of the products they owned and which they used frequently. Finally, they were asked to indicate on a five point scale their level of agreement (strongly agree--strongly disagree) with four statements. The two key questions were "The idea of using a computer frightens me somewhat" and "I like just about all kinds of music."

The results indicated that there were strong differences in level of experience with computers and much weaker differences with respect to experience with music tapes. Subjects were selected for the high and low experience computer groups on the basis of the results from the first five items. Cronbach's alpha coefficient for these items was .88 which compares favorably with the base criterion of .65 suggested for exploratory research by Nunally (1978). As the screening instrument did not indicate very large differences in music tape experience, that part of the study was administered to a class of forty-two students (in small groups) with the intention of selecting the highest and lowest levels of experience available within the group.

As the experimental procedures for the computer subjects yielded fifteen subjects with a high level of computer experience and sixteen subjects with a lower level of experience, the same number of subjects were selected from the forty-two music subjects to represent high and low level of music tape experience. This was done after the data was collected by calculating a "level of experience" factor on the basis of three questions asked in the main experiment. These questions asked the subjects to rate themselves (on seven point scales) as to their level of expertise (total expert--complete novice), interest (extremely interested in--no interest at all in), and opinion leadership (people frequently ask for my opinion about what music tape to buy--people never ask for my opinion about what music tape to buy) with regard to music tapes. The level of experience factor was created as a numerical average of the answers to the three questions ($\alpha=.88$). The subjects were then ranked on the experience factor and the sixteen highest and fifteen lowest ranked subjects were selected. These procedures provided relatively equal cell sizes of consumers with a naturally occurring range of product usage experience.

Manipulation Checks

The main study asked four questions of the computer subjects to act as "manipulation checks" for the level of experience variable. In addition to the three questions noted above (expertise, interest, and opinion leadership) the computer subjects were also asked to indicate on a seven point scale how frequently they worked on a computer (very frequently--never). An average of these four measures was used to create an experience factor for the computer subjects ($\alpha=.92$). As expected there was a significant difference for this variable between the high level of experience computer subjects ($\bar{x}=4.8$, $s=1.11$, $n=15$) and the low level of experience computer subjects ($\bar{x}=2.0$, $s=0.62$, $n=16$, $t=8.72$, $p<.00$, one-tailed test). Likewise, there was a significant difference in the experience factor for the high ($\bar{x}=5.9$, $s=.40$, $n=15$) and low ($\bar{x}=3.5$, $s=.58$, $n=16$, $t=13.22$, $p<.00$, one-tailed test) level of experience music subjects.

Dependent Variables

Experiential Dimensions: The way in which the consumers experienced the product evaluation situation was measured using a modified version of the Phenomenology of Consciousness Questionnaire (PCQ) (see by Pekala and Levine, 1981). The original instrument measures nine dimensions of consciousness: internal dialogue, awareness (both self awareness and state of awareness), imagery (amount and vividness), positive affect, volition, altered experience (meaning,

perception, time, body image), attention (direction and absorption), negative affect, and memory. The instrument contains thirty-seven items, including five pairs of duplicate item questions used to measure internal dialogue, state of awareness, imagery amount, positive affect, and direction of attention. Correlations for the duplicate pair items ranged from .47 (for state of awareness) to .83 (for internal dialogue) with an average correlation of .67 across the five duplicate item pairs. This result suggests that people asked to answer the same question twice on a questionnaire tend to answer it in a fairly stable way. Under the assumption that our subjects would be likely to respond to identical questions on the questionnaire with rather similar answers, we decided to modify the questionnaire by using only one item of the duplicate item pairs for all but one question. Given that the lowest correlation in the original study (.47) was found for the state of awareness item pair, this one pair was selected for inclusion in the modified instrument. In the current study, the correlation for this duplicate item pair across all the subjects was .59, suggesting that these subjects indeed tended to answer the same question with similar responses.

In further modification of the PCQ, one of the questions involving positive affect was reworded. The original question asked about awareness of sexual feelings (I was not aware of any strong sexual feelings--I experienced very strong sexual feelings). As it seemed fairly unlikely that subjects evaluating a computer would experience sexual feeling, this question was modified to ask about awareness of positive feelings. A second question was dropped, as the experimenters could devise no appropriate reworded question. The original question dealt with meaning, and was phrased "I had an experience which I would label as very religious, spiritual, or transcendental." Thus, the modified questionnaire had thirty-two questions measuring nine experiential dimensions.

Importance of product characteristics: Based on a preliminary investigation, five product characteristics were selected for each of the products as ones which would be expected to influence the subjects' attitudes about the products. For the computer these were: speed, keyboard layout, clarity of screen, keyboard touch, and portability. For the music tape, the characteristics were: rhythm or beat, mood of the music, melody, variety of sound, and effect it has on me. The subjects were asked if they were interested in buying the product and how important each characteristic would be in their purchase decision. The characteristics were rated on seven point scales ranging from extremely important to not very important at all.

Beliefs about the product: The subjects were then asked to rate the product which they had evaluated on each of the five characteristics. The instrument used a seven point scale ranging from very good to very poor.

Attitude toward the product: The subjects' product attitudes were calculated in terms of a multiattribute attitude model. The attribute importance ratings were multiplied by the beliefs about the product and summated to produce an attitude score.

Behavioral intentions: Given that it was not possible to actually have the subjects purchase the computer, a measure of behavioral intention for each product was taken. The subjects were asked if they were interested in buying this type of product and how likely it is that they would actually buy the particular product they evaluated (very likely--not very likely).

Results

Question 1--Applicability of the PCQ to product evaluation situations

The first research question deals with how effectively the PCQ could be applied to the study of consumer behavior. Three specific issues were raised: are the dimensions the same? does it have internal consistency? and does it work equally well for cognitively and affectively evaluated products?

To investigate the first part of the question, two confirmatory factor analysis procedures were performed. The first used a LISREL model (Joreskog and Sorbom 1984) for all of the subjects and each of the four sub-sets (i.e., computer, music, high experience, low experience), specifying a nine factor solution. However, in each case the results indicated that the model was mis-specified and so interpretable results were not obtained. Because the LISREL procedure did not provide useful results, a factor

analysis program was run which specified nine factors be extracted using a principal components analysis and a Varimax rotation.

Due to space limitations tables containing the factor loadings for each group are not included in this paper, however, they are available from the first author upon request. The results of this analysis are presented in a summary fashion in Table 1 which shows the factor that each item loaded on (using factor loadings of at least .50). Inspection of this table clearly indicates that the items do not all load on the dimensions which they are expected to. However, the results are not entirely discouraging, as further inspection indicates that many of the items which should load together do so. For example, in three cases (for the entire group, the music subjects and the high experience subjects) the positive affect items load together in a single dimension. Likewise, several of the items in each of the other dimensions (and their sub-scales) load together for one or more of the subject groups. These results suggest

Table 1
Nine Factor Confirmatory Factor Analysis--The Factor Each Item Loaded on by group

Proposed Dimensions and Items	Number of Items		The factor each item loaded on:				
			All S's	Computer S's	Music S's	High Exp S's	Low Exp S's
1. Internal dialogue	(1)	Siltalk	7	2	8	6	6
2. Awareness	(5)						
a. Self awareness	(2)	Slfawar	6	1	2	4	6
		Verycons	7	5	4	3	6
b. State of awareness	(3)	Uslcons	4	3	4	2	5
		Unuscons	4	3	4	3	5
		Uslaware	4	3	8	2	5
3. Imagery	(3)						
a. Imagery amount	(1)	Image	1	1	2	5	1
b. Imagery vividness	(2)	Detimage	1	1	1	7	2
		Dimimage	3	1	2	7	4
4. Positive affect	(3)	Posfeel	1	1	1	9	1
		Love	1	7	1	5	1
		Bliss	1	1	1	1	1
5. Volition	(4)	Attencon	8	4	6	3	2
		Actinvolv	5	5	2	8	4
		Passive	7	8	8	3	9
		Noctrlim	2	3	2	9	7
6. Altered experience	(8)						
a. Meaning	(2)	Enlight	1	1	1	1	1
		Nodepmng	1	1	1	1	1
b. Perception	(2)	Chgsize	5	4	6	3	8
		Unusqual	2	2	1	1	1
c. Time	(2)	Timeless	2	2	3	2	3
		Timechg	2	2	3	2	3
d. Body image	(2)	Separatn	8	8	9	2	4
		Bodyend	2	1	7	1	3
7. Attention	(3)						
a. Attention direction	(1)	Attoenv	9	8	7	4	7
b. Absorption	(2)	Distract	6	6	1	4	3
		Involved	6	2	1	4	2
8. Negative affect	(3)	Irritate	5	4	5	8	1
		Noanger	5	3	5	3	3
		Guilt	8	9	5	7	7
9. Memory	(2)	Imprdmem	3	7	6	6	2
		Nomem	6	6	2	4	2

Table 2
Exploratory Factor Analysis--The Factor Each Item Loaded on by Group

The factor each item loaded on:

Proposed Dimensions and Items	Number of Items		All S's	Computer S's	Music S's	High Exp S's	Low Exp S's
1. Internal dialogue	(1)	Siltalk	7	10	7	7	6
2. Awareness	(5)						
a. Self awareness	(2)	Sifawar	4	5	7	7	4
		Verycons	6	6	5	10	3
b. State of awareness	(3)	Usicons	3	2	4	5	2
		Unuscons	3	2	4	5	3
		Uslaware	3	2	4	5	2
3. Imagery	(3)						
a. Imagery amount	(1)	Image	1	1	0	6	5
b. Imagery vividness	(2)	Detimage	1	1	3	2	7
		Dimimage	1	9	3	4	7
4. Positive affect	(3)	Posfeel	1	1	1	1	9
		Love	1	8	1	1	5
		Bliss	1	1	1	1	1
5. Volition	(4)	Attencon	6	4	5	10	3
		Actinvolv	5	7	3	0	8
		Passive	7	10	11	8	3
		Noctrlim	0	0	8	0	9
6. Altered experience	(8)						
a. Meaning	(2)	Enlight	1	1	1	1	1
		Nodepmng	1	1	0	1	1
b. Perception	(2)	Chgsize	5	4	5	9	3
		Unusqual	2	3	0	1	1
c. Time	(2)	Timeless	2	3	2	3	2
		Timechg	2	3	2	3	2
d. Body image	(2)	Separatn	7	3	9	4	0
		Bodyend	1	1	2	4	1
7. Attention	(3)						
a. Attention direction	(1)	Attoenv	9	7	10	6	4
b. Absorption	(2)	Distract	3	7	9	3	4
		Involved	3	5	4	2	4
8. Negative affect	(3)	Irritate	5	4	1	4	8
		Noanger	5	2	6	3	3
		Guilt	10	9	6	6	7
9. Memory	(2)	Imprdmem	8	8	5	2	6
		Nomem	4	5	3	2	4

that, while the items of the PCQ scale do not load on the original nine dimensions, they do retain some of the proposed relationships. Based on these results, it seems appropriate to use exploratory factor analyses to discover more about the number of dimensions and the relationships among the items (the results for all groups are in Table 2).

First, a factor analysis was performed for the full set of subjects. The procedure included a principal components analysis followed by a Varimax rotation. The criterion for retaining factors was an eigenvalue greater than or equal to 1.0. The analysis yielded ten orthogonal factors. The first factor loaded heavily on imagery, positive affect and meaning. The second consisted of the time elements (part of the altered experience dimension). The third factor represented state of awareness, the fourth is most interpretable as absorption, and the fifth as negative affect. The other

factors did not match up very well with the original dimensions. These results provide moderate evidence that the PCQ captures some of the same dimensions in the domain of consumer product evaluations as it did in its original application.

Next, factor analyses were performed for the computer subjects and the music subjects respectively. Although there are a large number of items relative to the number of subjects, it has been argued by Adelman (1983) that the factor analytic results are stable even in this situation (see Arrindell and van der Ende 1985 and Bumb 1982 for further discussion). A subjective interpretation of the results indicates that the PCQ performed better for the music subjects than for the computer subjects. For the music subjects, the first factor loads heavily on positive affect, however for the computer subjects this first factor is difficult to interpret. For the music subjects, the second factor shows a strong

grouping on the altered experience dimension, the third factor represents imagery, the fourth awareness, the fifth is uninterpretable, and the sixth loads on negative affect. The seventh through the tenth factors do not match up well with any dimension. For the computer subjects, the second factor represents state of awareness, the third represents aspects of the altered experience dimension, with the clearest loading on the time variables, the fourth factor is not interpretable, the fifth loads most heavily on absorption, and the remaining factors do not match up well with any of the dimensions. Similar results occur for the other two groups.

While the results of the factor analyses do not match perfectly with the dimensions proposed by Pekala and Levine, they do suggest that the PCQ captures some important experiential factors that occur during a product evaluation situation. It appears, however, that the PCQ may perform somewhat better for a product which requires more affective evaluation than for a one requiring a more cognitive approach.

Another way of examining question 1 is to investigate the internal consistency of the items measuring each of the nine dimensions and the instrument's overall consistency. A series of Cronbach's alpha correlations was run on the items within each dimension. These items should be strongly correlated with one another. As can be seen in column 1 of Table 3, the correlations for several of the dimensions are reasonably strong. For example, the correlation coefficient for the three measures of state of awareness is .68, for imagery it is .73, and for positive affect it is .79. On the other hand, the coefficient for the items measuring volition is .32, for altered experience it is .39, and for attention it is .34. These results indicate that some of the dimensions measured by the PCQ scale are more appropriate in a product evaluation situation than are others.

Columns 2 and 3 in Table 3 show the alpha coefficients for the computer subjects and the music subjects. The overall average alpha coefficients show no

Table 3
Dimensions of Consciousness and Corresponding Cronbach's Alpha Coefficients for the Full PCQ

Dimensions	Number of Items		Alpha Coefficients					Pekala Levine # of Items
			All S's n=60	Computer S's n=29	Music S's n=31	Low S's n=32	High S's n=28	
1. Internal dialogue	(1)	Siltalk						(2).91
2. Awareness	(5)							
a. Self awareness	(2)	Sifawar Verycons						
b. State of awareness	(3)	Uslcons Unuscons Uslaware	.68	.72	.60	.67	.68	(5).86
3. Imagery	(3)							
a. Imagery amount	(1)	Image						
b. Imagery vividness	(2)	Detimage Dimimage	.73	.70	.73	.69	.74	(4).84
4. Positive affect	(3)	Posfeel						
		Love Bliss	.79	.70	.81	.72	.83	(4).77
5. Volition	(4)	Attencon Actinvolv Passive Noctrlim	.32	.27	.27	.51	-.04	(4).74
6. Altered experience	(8)							
a. Meaning	(2)	Enlight Nodepmng						
b. Perception	(2)	Chgsize Unusqual	.39	.39	.42	.49	.26	(9).73
c. Time	(2)	Timeless Timechg						
d. Body image	(2)	Separatn Bodyend						
7. Attention	(3)							
a. Attention direction	(1)	Attoenv						
b. Absorption	(2)	Distract Involved	.34	-.53	.53	.57	-.06	(4).72
8. Negative affect	(3)	Irritate Noanger Guilt	.49	.35	.53	.59	.39	(3).65
9. Memory	(2)	Imprdmem Nomem	.51	.46	.46	.32	.70	(2).61
Overall Average Alpha Coefficient			.47	.46	.48	.51	.41	.76

difference between these two groups of subjects. However, investigation of the individual dimensions does suggest differences in how well some dimensions applied to the groups. For example, the awareness items show a stronger correlation for the computer group (.72) than for the music group (.60). In contrast, the music group has a stronger correlation in both the positive (.81) and negative (.53) affect dimensions than does the computer group (.70 and .35 respectively). The volition and altered experience dimensions do not perform very well for either group.

Columns 4 and 5 show the alpha coefficients for the low versus high experience groups. The overall average alpha suggests that the scales worked somewhat better for the low experience subjects than for the high experience ones. Inspection of the individual dimensions shows that the alpha coefficients for the low experience subjects are much higher on the dimensions of volition (.51 vs. -.04), altered experience (.49 vs. .26), attention (.59 vs. -.06), and negative affect (.59 vs. .39). The memory dimension does much better for the high experience subjects (.70) than for the low experience ones (.32), and the positive affect dimension does somewhat better (.83 vs. .72).

Finally, the last column shows the results of the Pekala and Levine (1981) study. Although their study used a different number of scale items in several dimensions, the results indicate a generally poorer performance in the current study than in their research. The primary exceptions to this are the positive affect dimension and the memory dimension for the high experience subjects.

Overall, it appears that the awareness, imagery, and positive affect dimensions worked quite well for both types of products and for both levels of experience. The memory dimension worked moderately well for all but the low experience group, and the negative affect dimension worked rather well for the music subjects and the low experience subjects. The attention dimension did not work very well for the computer subjects or the high experience group, but did work for the music subjects and the low experience group. The volition scales only worked well for the low experience subjects, and the altered experience scales did not do especially well. In general, the PCQ appears to have worked moderately well when applied to a product evaluation experience.

Questions 2 and 3

The second research question involves whether including experiential dimensions improves the relationship between traditional measures of attitude and behavioral intentions. As this is an exploratory study and because there is little in the way of theory to suggest precisely which of the PCQ dimensions should be related to which treatment condition, a regression approach was used. With behavioral intentions as the criterion variable, a model was specified so that the attitude measure was first included in the model and then, using a forward selection procedure, the nine dimensions of the PCQ were considered. Thus, in each case, the model included attitude and any of the dimensions which significantly contributed to the relationship with behavioral intentions.

The results for the full group of subjects had an adjusted R^2 of .35 ($p \leq .01$) using attitude and attention as predictor variables (both significant at the .01 level). The weakest result was for computer subjects with an adjusted R^2 of only .12 ($p \leq .10$) using attitude and

positive affect (due to multicollinearity, neither of these made a significant contribution individually to the relationship). For low experience subjects, the adjusted R^2 was .31 ($p \leq .01$) using attitude and positive affect. However, only positive affect made a significant contribution to the relationship ($p \leq .05$). The adjusted R^2 for the high experience subjects was .51 ($p \leq .01$) using attitude, awareness, and memory (all contributing significantly to the relationship, $p \leq .01$). Finally, for the music subjects, the adjusted R^2 was .52 ($p \leq .01$) with both attitude and attention making a significant contribution ($p \leq .01$ and $p \leq .05$, respectively).

These results are quite encouraging, indicating that dimensions of the PCQ can produce improved results in the relationship between attitude and behavioral intention, and may even provide a useful replacement for the attitude measure itself. Likewise, in answer to the third research question, they suggest that a single attitude model may not apply very well to describing both affectively and cognitively evaluated products. The model did much better for the affectively evaluated product (i.e., music), and a different dimension of the PCQ scale was selected for the two cases. Also, the results indicate that different models were useful for the low and high experience groups, in fact suggesting that the traditional measure of attitude worked poorly for the low experience subjects.

As an interesting aside, the analysis described above was performed for level of experience across product type. The poorest results were for the high experienced computer subjects with a non-significant ($p \leq .35$) adjusted R^2 of .53, using attitude and all nine dimensions of the PCQ. The low experience computer subjects had an adjusted R^2 of .34 ($p \leq .02$) using attitude ($p > .95$) and altered experiences ($p \leq .01$). For the music tape, the low experience subjects had an adjusted R^2 of .53 ($p \leq .01$) using attitude ($p \leq .10$) and positive affect ($p \leq .03$), while the adjusted R^2 for the high experience music tape subjects was .70 ($p \leq .01$) with attitude ($p \leq .02$) and volition ($p \leq .01$). Note that for the low experience computer subjects the cognitively driven measure of attitude did not work very well. Presumably, these subjects were unable to evaluate the computer on a logical, rational basis and may have used a more experientially driven approach. It is rather disconcerting that neither the attitude measure nor the experiential measure worked well for the high experience computer subjects, certainly indicating a problem with the measurement scales for this group. However, the fact that the experiential dimension added significantly to the music subjects certainly seems to indicate the music tape was being evaluated on an experiential as well as a cognitive basis.

Discussion

Overall the results of the study are promising. There appears to be an indication that the dimensions proposed by the PCQ can be usefully applied to a product evaluation situation. However, the instrument seems to work better for the affectively evaluated product than for the cognitively evaluated one. In addition, because the model test showed that for the low experience subjects the positive affect dimension was significant and the attitude measure was not, the results suggested that low experience subjects probably used affect to evaluate the products to a larger extent than did the high experience subjects. Thus, there is limited support for the notion

that we should consider the ways in which consumers experience products and we should measure these using instruments that go beyond the traditional cognitive oriented measures of attitude.

On the other hand, the PCQ instrument should not be applied in its current form to consumer product evaluation situations. The scales were developed without regard to the experiences a consumer might have in an evaluation or a consumption situation. Rather the results of this study should encourage further research into the dimensions of consciousness which are related to product situations. For example, in the computer situation anxiety might be an experiential dimension which would have been useful. In addition, many dimensions of emotion have been discussed which may be important in consumption experiences (see Holbrook 1986) that are not tapped by the PCQ. However, the results of this study provide a strong indication that a questionnaire which measures important dimensions of consumer experiences can be developed.

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The Explanatory Power of Values in Preference Judgements: Validation of the Means-End Perspective

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Abstract

Means-end theory proposes that product preferences are significantly influenced by personal values which serve to give relative salience to the consequences derived from consuming the product and to the product's attributes. In this study, the chain from product attributes (A), to consequences (C), to values (V) is uncovered through an in depth interview technique, laddering. An individual's chains of A/C/V's are then related to their pairwise judgements of product preferences and perceptions through ordinal regression. This paper will statistically assess the hypothesis that values contribute significant explanatory power for product preferences, over and above the explanatory power of consequences or attributes. In addition, the paper explores how this explanatory power differs by level of product usage.

Introduction

The means-end model (Gutman, 1982) assumes that a consumer's personal values influence product choice by giving salience to the concrete attributes of the product and the benefits it provides. Understanding the link between product choice and consumers' value systems has been successfully applied to product positioning and assessing product strategy (Reynolds and Gutman, 1984). This paper will test the hypothesis that values add statistically significant explanatory power to preferences over and above product benefits and attributes.

Products go beyond functional properties to have meaning in the consumer's life, according to means-end theory. Consumers move from the concrete level of product attributes to the positive benefits provided by consuming a product on to the highest level of abstraction, personal values (Reynolds, 1985). Consumer preferences may be explained in terms of this chain from attributes to consequences to values. While a great deal of research has been based on attributes and even benefits, surprisingly little has attempted to make the step to values.

One effort to make this final link between personal values and preferences has been through in-depth, individual interviews with consumers, termed laddering. Starting at the lowest level in the chain, consumers discuss what attributes they use to discriminate between products and why they are important. Next they are probed to think about what consequences they derive from the product and finally why this consequence is important to them. At this highest level, values define what consequences a person sees as desirable and the consequences in turn define what attributes appear important. Therefore, in means-end theory the product is translated from concrete attributes (A) to an abstract consequence (C) and then linked directly to self through values (V). These A/C/V chains can then be used to explain differences in product preferences (Reynolds and Perkins, 1986).

This paper focuses on the contribution of the values level in explaining preference. The major concern

here is whether including values improves our predictive ability. Assuming that including the values level does prove to be worthwhile, a second research question relates to how the A/C/V chain differs by intensity of product usage. As a consumer uses the product, the cognitive links in the chain change, thus the ability to predict preference changes also. For instance, the attribute level may not mean as much to a heavy user who does not choose based on distinctions between products' physical features. At the other end of the chain, values may add even more explanatory power to heavy users' preferences than to light users, because the product is more closely linked to the self.

Background

Two small-scale consumer studies (Reynolds, Gutman, and Fiedler, 1984; Reynolds and Jamieson, 1984) have reached the same tentative conclusion--the value level of the means-end chain produces the greatest fit with preference judgements, followed by the consequence level second and the attribute level third. On the other hand, if perceptual rather than preference judgements are considered, the fit does not increase from attributes to consequences to values. Means-end theory argues that preference and perception stem from different processes. Physical attributes serve as the basis for perceptual distinctions between products, but preferential differences develop from within the consumer. Preference is based on how the product is personally meaningful to the consumer.

In a study related to job performance appraisal, Jolly, Reynolds, and Slocum (in press) found that values did add significant explanatory power beyond attributes and consequences. Of course, job performance is a very values laden topic. This proposition has not been statistically tested for relatively low involvement topics, such as consumer products.

The second research question concerns how the explanatory power of values changes with the level of product usage. A great deal of recent research has examined the effects of product experience on a consumer's cognitive structure (see Alba and Hutchinson, 1987, for a review). Cognitive structure refers to the knowledge a consumer has about products and how that knowledge is organized. As product experience increases, consumers accumulate more knowledge about more products, learning how to make finer distinctions between them. Their understanding of the product category will be more complex and abstract compared to a "novice" consumer. Also with experience this knowledge becomes organized by the function or meaning of products rather than their surface features.

As an exploratory extension of the basic research question addressed in this paper, the A/C/V structure of "expert" consumers will be compared with that of "novice" consumers. Framed in means-end terminology, the change in cognitive structure due to increased product experience would predict that "novices" attend to the concrete attributes of a product as compared to "expert" consumers who are more concerned with the benefits that can be derived from the product and the meaning of the

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product to them. Though experienced users know more about product attributes than others, they have moved beyond that level of analysis to a deeper level of meaning. For the purposes of this study, "expert" and "novice" consumers were identified by their product usage rate. The explanatory power of the values level of the means-end chain should be greater for the preference judgements of experts than for novices.

Methodology

Sixty consumers who were familiar with salty snack foods participated in an extensive study of product perceptions and preferences and their relation to product attributes, consequences, and values. The subjects, two-thirds of whom were women, lived in a large metropolitan area. Each consumer worked individually with a marketing researcher through a two hour interview that consisted of several ratings, rankings, and open-ended questions about salty snack foods, including assessment of competitive advertising. A key element of the interview was the laddering procedure which essentially determines the higher level meanings of product attributes (Gutman and Reynolds, 1979). The main focus of the study was on nine competing brands in the salty snack category.

To obtain pairwise perception ratings for the nine brands, consumers received a set of thirty-six cards each of which named a pair of brands. The researcher instructed the subject to sort each card into one category along a scale from "very similar" (1) to "very dissimilar" (9). In effect the consumer rates every pair of brands on a nine point scale. Following a procedure suggested by Cooper (1973), the preference rating task was repeated in a nearly identical fashion. First the consumer was asked which member of the pair was preferred and then placed the card in the appropriate pile corresponding to a nine point scale ranging from "about equally preferred" (1) through to "totally prefer one over the other" (9). The resulting ratings were arranged into two proximity matrices per consumer. Thus both psychological distances and intensity of preferences between brands are measured as multidimensional constructs, using the same basic nine point scale. Both judgements represent distances between pairs of stimuli, a similarity and a preference distance. The similarity task was performed first, a different rating scale task was then performed, then the preference judgements.

The researcher then "laddered" each consumer starting with concrete bipolar attribute constructs elicited from the subject in a triadic sort task (Kelly 1955). The "reason for importance" was obtained after asking the respondent which pole of the bipolar construct was preferred and why. This method of probing is followed for each respondent by "why is that important to you" questions, until the consumer can no longer continue "up the ladder." For example, common attributes identified for salty snacks were "crunchy," "flavor," and "taste." The consumer may state that they like more "crunchy" snacks because they are "good with dips," "filling" and "relaxing." These consequences of eating crunchy snacks could possibly lead to the personal values of "self-enjoyment" and "belonging." Following the laddering procedure, consumers rated all nine products on the degree to which they possess or facilitate the attributes, consequences and values uncovered. Each consumer elicited at least two complete ladders, determined by having one element at each A/C/V level. The specific A/C/V chains differed by subject.

Consumers also rated their frequency of use in each of seven occasions, such as lunch, snacks, or entertaining. The five point rating scale ranged from "five or more times a week" (1) to "less than once a month" (5). An overall frequency of use index was obtained by summing over all occasions for each consumer (Table 1). The fifteen heaviest users averaged almost twice the level of consumption of the lightest users.

**Table 1
Frequency of Product Use**

Usage index	# Subjects	
15-20	15	more usage
21-24	15	
25-27	16	
<u>28-35</u>	<u>14</u>	less usage
mean	23.9	60

At the end of the interview subjects had (1) rated every pair of brands for perceptual similarity and (2) preference intensity as well as (3) attribute, consequence, and value ratings specific to each brand for the elements of two A/C/V ladders and (4) the frequency of use by occasion.

Cognitive Differentiation Analysis

The relationship of the pairwise preference or perception judgements to the attributes, consequences and values is estimated by Cognitive Differentiation Analysis (CDA), which is described fully in Reynolds and Sutrick (1986) and extended in Reynolds, Weeks, and Perkins (in press). Briefly, CDA is an individual level analysis which uses ordinal regression to relate each vector of brand ratings to the proximity matrices. The procedure resembles property fitting where a matrix of distances is submitted to multidimensional scaling then the vectors of ratings regressed on the derived scaling stimulus coordinates. CDA has several advantages over property fitting including direct ordinal regression of the matrix onto one or more vectors of product ratings. In addition, standard regression measures such as R-squared, estimated Betas, F and t statistics are calculated as well as ordinal measures of association specific to this technique.

Because the ordinal regression requires decomposing the data into pairs of pairs, the predicted dependent variable must be "refolded" back into pairs corresponding to the original pairwise judgements. The squared Pearson correlation between the predicted and actual judgements, termed "R-squared refolded" or R2r, assesses the fit between product ratings and pairwise product judgments. With nine salty snack products in this study, subjects made 36 paired comparisons. Because of the pairs of pairs decomposition, there are 630 unfolded predicted values but only 36 "refolded" predicted values. Thus a correlation of .27 (or about .07 if squared) is significant at a .05 level. The analyses in this paper use the R2r's as the dependent variable.

Design of the Analyses

This paper concerns the amount of variance explained, R2r, by value level ratings compared to consequences and attributes. If values significantly improve the ability to predict preferences, this would argue for going beyond product attributes and even beyond the consequence level to include personal values. One method of statistically testing the explanatory

contribution of values is by nesting CDA regression models. Using a forced order of entry, attributes are entered first, consequences second, and values third, with the incremental change in R2r indicating the increased explanatory power of the set of variables. In effect, the analysis answers how much the R2r increases when more independent variables are included in the CDA regression equation. Six CDA equations were estimated per consumer--attributes only, then attributes and consequences, and finally all three, for perception and preference judgements. Previous means-end research using CDA has used this methodology to study the incremental gain in R2r from attributes to consequences to values for job performance appraisal (Jolly, Reynolds, and Slocum, in press).

Results

Mean CDA R2r values for the six equations are presented in Table 2. The mean over all perception measures equals .19 compared to .32 for preference. Also the R2r increases from .15 for attributes to .28 for consequences and .35 for values. CDA R2r increases from attributes to consequences to values for both preference and perception, but increases much more for preference than for perception.

Table 2
Means for Preference and Perception Tasks By Attribute, Consequence and Value Measures

	Attributes	Consequences	Values	Average by Task
Preference	.17	.37	.45	.32
Perception	.13	.20	.25	.19
Average by Measure	.15	.28	.35	

An analysis of variance on the CDA R2r data was performed across all sixty consumers and six equations per subjects with task (preference and perception) and measure (attributes, consequences, and values) as the main effects. The equation shows significant differences (Table 3) for both main effects and their interaction as expected.

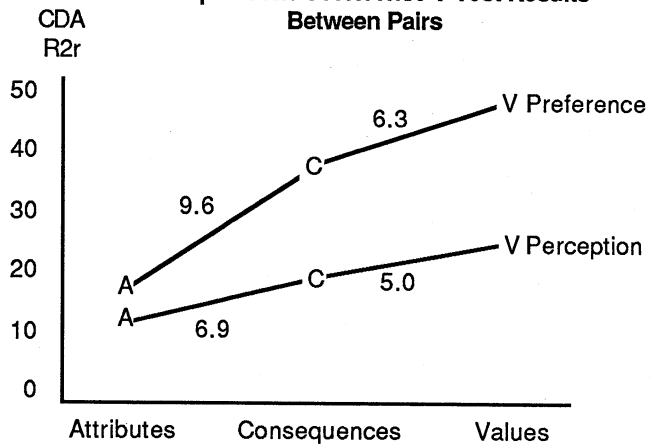
Table 3
Analysis of Variance Results

Dependent variable--CDA R2r F (5,354) = 35.57 p < .01
R² = .33

Source	df	F	prob
Task--Preference and perception	1	62.93	.01
Measure--Attributes, consequences and values	2	48.52	.01
Task X Measure	2	8.95	.01

Figure 1 plots the six task by measure means and shows the relevant pairwise t-test values, all of which are significant (p<.01). It is obvious that values do significantly increase the predictive power for both preference and perception judgements over attributes and consequences.

Figure 1
Plot of Attributes, Consequences and Value R2r for Perception and Preference T-Test Results Between Pairs



To measure the incremental gain in R2r, a regression equation was estimated which allowed for different coefficients by task and measure. This dummy-variable regression (not a CDA regression) provides the same result as the previous ANOVA but specifically tests whether the mean R2r's differ by task and measure. The regression coefficients indicate the increase in R2r due to adding consequences to attributes or adding values and consequences to attributes. It also measures the differences between perception and preference R2r's. The resulting equation (Table 4) finds that means significantly differ as expected. All coefficients are significant at a .05 level. Using attribute measures as the basis, both perception and preference R2r increase by including consequences and increase again by including values, but the rate of increase is greater for preference.

Table 4
Regression Equation for Task by Measure

F (4, 355) = p<.01 Adjusted R2 = .32

CDA R2r = .15 using only attributes to explain preference or perception

- + .05 adding consequences to attributes
- + .10 adding values and consequences to attributes
- + .17 for preferences only, adding consequences to attributes
- + .20 for preferences only, adding values and consequences to attributes

Interpreting the regression equation simply requires adding up the appropriate coefficients. When only attributes were used to explain perception or preference matrices, the R2r averages the intercept alone, .15. For perception judgements, the incremental change in CDA R2r due to adding consequences to attributes was .05 while including both values and consequences added .10 to the intercept. On the other hand, for preference judgements two coefficients must be added to the intercept. Including consequences increases the amount of variance explained for preferences by .22 (.05 for consequences and .17 more for preferences). Finally, when both values and consequences were added to attributes to explain preferences, the average R2r

increased by .30 (.10 plus .20). In general, including the value level ratings adds .05 to the average CDA R2r in explaining perception over and above including consequences and attributes. However, when the CDA regression was performed on the preference judgements, the average increase in R2r due to including the value level ratings was .08.

An additional set of analyses involved the consumers' frequency of product use. An analysis of variance with task, measure, and frequency of use results in all three main effects being significant (Table 5). As will be detailed later, R2r decreases with greater product usage. In other words, across all three measures and both tasks the average amount of variance explained declines with heavier use.

Table 5
Analysis of Variance Results

Dependent variable--CDA R2r F(101,258)=2.80 p<.01
R²=.52

Source	df	F	prob
Task--Preference and perception	1	63.97	.01
Measure--Attributes, consequences and values	2	49.33	.01
Frequency of use	16	3.52	.01
Task X Measure	2	9.10	.01
Task X Frequency of use	16	1.97	.02
Measure X Frequency of use	32	.24	.99
Task X Measure X Frequency of use	32	.21	.99

The task by frequency interaction is significant. In order to illustrate the importance of this interaction, the usage index will be categorized into three levels; the 25% of consumers who use the product the most frequently were designated the "heavy users," the 25% who use it the least, the "light users," and the 50% in the middle as "medium users." Means for these three groups by preference and perception are displayed in Table 6.

Table 6
Means for Preference and Perception Tasks by Frequency of Use

	Heavy users	Medium users	Light users	Average by Task
Preference	.27	.32	.42	.32
Perception	.16	.20	.20	.19
Average by Use	.22	.26	.31	

Note that across users the mean perception value does not change much from .16 to .20, but for preferences the heavy users have a mean of .27 which increases to .42 for light users. Preference means are higher than perception means, but light users have a much larger difference between the two.

Though the three way interaction of task by measure by frequency of use was not significant, inspecting only the preference task finds a very interesting relationship. For all consumers, the highest R2r was achieved when values were included in the CDA regression equation; however, the magnitude of the R2r for attributes and consequences decreases dramatically

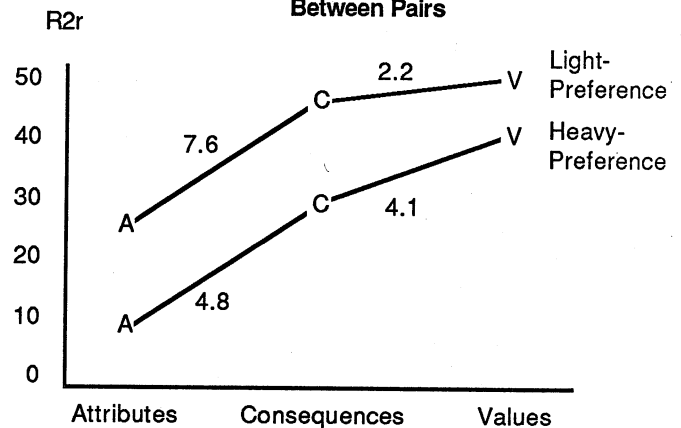
with frequency of use. Table 7 shows that heavy users have an attribute R2r of .09 compared to .26 for lighter consumers. Also consequences increase from .29 for heavy users to .47 for light users.

Table 7
Preference Means by Frequency of Use and Attributes, Consequences, and Values Measures

	Attributes	Consequences	Values	Average by Task
Heavy users	.09	.29	.43	.27
Medium users	.16	.36	.43	.32
Light users	.26	.47	.53	.42
Average by measure	.17	.37	.45	

While all consumers increase about 20 points when consequences are added to attributes, the gain from adding values to consequences differs by usage level. Heavy users increase by 14 points compared to only 6 for light users. In fact, for heavy users the mean CDA R2r increases 48% by including values, but only 13% for light users. This difference is portrayed in Figure 2 which shows a small change from consequences to values for light users but a larger change for heavy users. Also the pairwise t-tests are presented, all of which are significant (p<.05).

Figure 2
Plot of Attributes, Consequences and Values for Heavy and Light Users with T-Test Results Between Pairs



In summary, there are two major results--first, values add significant explanatory power over consequences and attributes, especially for preference. Secondly, values contribute more to the explanation of preference for heavy users than for light users.

Conclusions

This research has confirmed the hypothesis that personal values add significantly to explaining product preferences. As predicted by means-end theory, products have meaning to a consumer beyond the attribute or even benefit level. In contrast, explaining the perceptual differences between products is not improved as much by including values.

The more exploratory aspect of this research concerned the effect of product usage rate on the means-end chain. Values appear to contribute more to

explaining heavy users preferences than light users. There may be stronger ties between the self and the product for heavy users. On the other hand, attributes capture almost half of the total variance explained for light users indicating that they may be making their choices primarily on concrete product features.

These results have important implications for product positioning and strategy development. First, all three levels in the A/C/V chain should be considered in order to develop a complete picture of consumer preference. Failure to include values will reduce the predictive ability of the model, but more importantly it will miss important information that ties closely to product choice.

Secondly, depending on the target market, different levels of the chain should be stressed in advertising strategy. Values are especially influential for heavy users, but light users or trial users are more attuned to physical attributes. Evidently as usage increases consumers' A/C/V chains evolve from being primarily attribute driven to value driven.

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Effects of Impulse Purchases on Consumers' Affective States

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Abstract

This article explores the relationship between consumers' impulse buying behavior and the internal affective states that follow their impulse purchases. The results of an exploratory study that examines how impulse buying is related to specific post-purchase affective states is reported. In addition, the effects of impulse buying on feeling state valence and intensity are discussed.

Introduction

"When the going gets tough, the tough go shopping (anonymous)."

This popular American folk saying has appeared extensively on contemporary artifacts such as bumper stickers and tee-shirts, and highlights ideas about buying's palliative effects. It also alludes more generally to the relationship between consumers' affective states and their buying behavior. Moods and emotions are central elements of the consumer's situational environment (Belk 1975). Findings from psychology (e.g., Isen and Simmonds 1978; Cunningham 1979; Isen and Shalke 1982) and consumer behavior (e.g., Berneman and Heeler 1986; Gardner and Wilhelm 1987; Goldberg and Gorn 1987) indicate feeling states influence a wide variety of internal processes and observable behaviors. (For a review of this research, see Gardner 1985.) One context where feeling state volatility and buyer behavior often interact is in consumer impulse buying. Shifts in affective state can stimulate pursuit of the instant gratification that buying provides. Conversely, the act of impulse buying and the associated possession of the product purchased can trigger changes in affective state. The relationships between consumers' affective states and their impulse buying behavior remain largely unexplored despite their importance.

Impulse buying is pervasive in the American marketplace today, and has been the target of market and consumer research for over forty years (e.g., Applebaum 1951; Bellenger et al. 1978; Clover 1950; Cobb and Hoyer 1986; *Consumer Buying Habits Studies* 1945; Katona and Mueller 1955; Kollat 1969; Rook 1987; West 1951). Contemporary marketing innovations such as 24-hour retailing, telemarketing, cash machines, "instant credit" and home shopping networks make it easier for the consumer to operate on whim now than ever before. In spite of the importance of impulse buying in America today, we know surprisingly little about the dynamics of this type of buyer behavior.

One way to gain insight into the motivation underlying impulse buying is to investigate the feeling states that follow it. From this perspective, mood states can be interpreted as affect-oriented elements animating impulse buying episodes. For example, Weinberg and Gottwald (1982), Rook and Hoch (1985), and Rook (1987) report impulse buying is more intense and arousing than contemplative buying.

The purpose of this paper is to provide a preliminary view of the relationship of impulse buying

to post-purchase moods. The exploratory empirical study reported here examined the specific feeling states, valence of affective states and level of arousal associated with post-purchase feeling states. In addition, the work seeks to go beyond investigating positive versus negative affective states, to examine the relationship of impulse buying episodes to specific post-purchase affective states.

Method

The data reported are part of a larger project to understand the relationship of feeling states to impulsive buying behavior. That project examines not only the affective consequences of impulsive buying (reported here), but also affective antecedents of impulse buying and buying impulsiveness as a trait. For a more complete description of the data collection procedures used in this project, see Rook and Gardner (1987).

Research Instrument

The data were collected using a six-page questionnaire titled: CONSUMER BUYING SURVEY. Respondents were initially provided with brief definitions of impulse buying and affective states. Impulse buying was defined as making a purchase in response to "a sudden, unexpected urge to buy something." Affective state was defined as "how you were feeling" at a moment in time. Respondents were asked about the feeling states that preceded and immediately followed their most recent impulse purchases. They were also asked how likely they would be to engage in impulse buying when experiencing various affective states, and how likely they would be to experience these feelings after an impulsive purchase. Respondents were further asked about the stability of their moods. Finally respondents were presented with questions for demographic classification, and for ranking the sample in terms of impulse buying frequency and proclivity. The questionnaire consisted of 11 open-ended questions, and 52 fixed-format response items.

Respondent Sample and Data Collection

One hundred fifty-five respondents were selected to represent a broad spectrum of the consuming adult population. Subjects were recruited in a variety of settings (including offices, street corners, coffee shops, beaches, and lobbies) in approximately equal proportion from three geographic locations (the Los Angeles, New York, and Washington, D.C. metropolitan areas) during the summer of 1986. Subjects were selected from three areas to increase the representativeness of the sample and minimize geographic artifacts which might arise from the use of one location. Subjects participated without financial compensation, and were promised copies of the study's findings. Recruiters used quota sampling to select respondents who would represent a broad age spectrum, proportionate representation of the sexes, and economic and cultural diversity. However, the sample is not presumed to be representative of the overall United States population.

Respondents ranged in age from 19 to 91 ($X=37.6$; $s.d.=15.0$). Roughly 25 percent of the sample

belong to the 19-25 age group; 25 percent fall between 26 and 36; another quarter between 33 and 50; and approximately one quarter of the sample are over 50 years old. Slightly more than half the sample (54 percent) are female, and 46 percent are male. Almost 40 percent indicated a Protestant religious preference, 30 percent Catholic, 16 percent Jewish, and 14 percent "other" or no religious affiliation. Economically the sample is upscale. About one third of the respondents live in households with annual incomes below \$40,000; another third reported household incomes between \$40,000 and \$75,000; and a final third indicated annual incomes above \$75,000. This characteristic is mirrored in the sample's occupational data; respondents are concentrated in the managerial and professional categories, and also among the college student population.

All data were obtained through self-completion procedures. Respondents were given questionnaires and a "hot-line phone number" to call if they were confused about any of the questions. Each form took about one half hour to complete. Respondents took the questionnaires with them to their homes or desks and returned the completed forms within a week.

The questionnaire's eleven open-ended items were analyzed using content analytic procedures. Coding categories were derived both from the mood literature and inductively using a subsample of respondents. Relying on procedures outlined by Kassirjian (1977, 1983), two trained graduate student judges coded the responses into categories.

Findings

Post-Purchase Moods: Better or Worse?

Respondents were asked to indicate whether they felt better, no different, or worse after making their most recent impulse purchases. Seventy-five percent (N=116) reported they felt "better" after their impulse purchase; 16 percent (N=25) said they felt "no different"; and 8 percent (N=13) said they felt "worse." When asked "Why?", those who reported feeling better cited a variety of product benefits generated by their impulse purchase, among these the vague but pervasive notion of "getting something you needed," and, also, accomplishing a necessary task. Other reasons given for feeling better after buying something on impulse include enjoyment of the novelty and surprise it provides, and getting a "good deal." Second only to receiving these various product benefits, respondents cited mood alteration as a reason for feeling better after making an impulse buy. These anecdotes highlight the ameliorative effects that impulse buying has on negative moods:

I was depressed -- a long, shitty day at the beach. After I bought some more records I felt better (male-29).

I was frustrated with my kids and needed to get away from them...(they) were fighting, not minding, and I needed a change...I had had as much as I could take at that point...I had been wanting the item I bought and was happy to get it...I felt happy with myself and went home with no frustrated feelings for my kids (female-38).

I was depressed. I had lost 10 pounds and wanted a new image. (I was thinking about being) a widow for 7 years, unsatisfactory relationships, (and) changing or growing...I was confused about what I wanted to look like. I wanted to look sexy. I have a nice body and didn't know how to look 60 and yet sexy in a tasteful way. What the hell, what have I got to lose? (After the purchase) I felt fantastic because it made me feel 20 years younger, and I realized I had a fantastic body for a 60 year-old lady. I did it for myself. No thoughts of children, husband, I sacrificed enough, this was just for me (female-60).

I was kind of bored, wanted to do something different. My job is monotonous, the same daily activity, lack of social excitement...I needed to do something different and exciting, wanted to reward myself...(After the purchase) I was satisfied, it felt good to reward myself with the purchase (male-25).

Whether someone is depressed, frustrated, or bored, impulse buying appears to be an effective tactic for breaking out of an undesirable mood state. Post-impulse purchase moods, however, are not uniformly positive. Respondents were asked to indicate, on a 5-point scale, the degree of happiness and/or guilt they experienced after their most recent impulse purchase. Over 90 percent of the sample fell within the "somewhat" to "extremely" happy range. These figures suggest impulse buying is a pervasive source of immediate gratification among a diverse population of consumers. On the other hand, considerable ambivalence is evident; 37.9 percent of the sample fell within the "somewhat" to "extremely" guilty range.

Specific Post-Impulse Purchase Moods

The most common post-purchase mood types further provide evidence of the mood altering features of impulse buying. Insights into specific moods following impulse purchases were gleaned from three measures:

- 1.) Mood selected from a list of 13 moods as most likely to follow an impulse purchase,
- 2.) Mood likelihood scale score for each mood based on 1=very likely, 6=not at all likely, and
- 3.) Respondents' post-purchase mood in last impulse buy.

As indicated in the Table, there is some consistency across measures. In addition, findings are consistent with those for mood valence, and indicate that consumers are quite likely to experience a positive mood after an impulsive purchase. Almost 80 percent of the moods selected as most likely to follow an impulse buy can be classified as positive. There is some evidence of ambivalence and negativity too; over 15 percent of post impulse-purchase moods are negative.

Table
Post-Purchase Mood Measures

Mood Type	Mood selected as most likely to follow an impulse purchase			Mood likelihood scale score		Post-purchase mood in last impulse buy	
	Rank	N	(%)*	Rank	Score**	Rank	N
Pleasure	1	44	(29.9)	1	2.03	1	28
Excitement	2	42	(28.6)	2	2.18	1	28
Content/relaxed	3	14	(9.5)	3	2.86	4	21
Carefree	4	10	(6.8)	4	2.88	6	1
Anxiety/Guilt	5	7	(4.8)	7	4.31	1	28
Powerful	6	6	(4.1)	5	3.41	6	1
Bored	6	6	(4.1)	10	5.06	6	1
Mischievous	6	6	(4.1)	6	3.65	6	1
Frustrated	9	5	(3.4)	9	4.90	6	1
Depressed	10	4	(2.7)	8	4.66	5	6
Misery	11	2	(1.4)	13	5.36	11	0
Sleepy	12	1	(.7)	12	5.35	11	0
Hostility	13	0	(0)	11	5.29	11	0

* Percentage figure is based on total responses (N=143)

** Scale based on 1=very likely, 6=not at all likely

Consistency across measures is particularly strong among those mood states most associated with post-impulse purchase feelings. Five of the thirteen moods examined account together for 80% of the respondents' choices of mood most likely to follow an impulse purchase, four of the top five likelihood scores, and 91% of the respondents' choices of mood following their last impulse buys. These five affective states appear to be most strongly associated with post-impulse-purchase feelings, and will be discussed in some detail.

As indicated in the Table, a "pleasure" mood ranked first across all three measures. This is a broad, generalized mood that appears with various shadings. Respondents explained that their shopping experience was pleasant and enjoyable. They described themselves as basking in the after-glow of the act of possession, feeling they have accomplished something worthwhile:

My impulse purchases generally work out well...When I get home I'm generally pleased with how well it goes with what I already have, or fits the spot in the house I selected for it (female-35).

There is also a sense of release; the urgency to buy has been vented. The item can be taken off the consumer's mental list, allowing pleasure to replace tension. Basically the same ideas were echoed by the relatively fewer number of respondents (10 percent) who chose the "content/relaxed" mood as most likely to follow an impulse buy. Both mood likelihood scores and respondents' moods after their last impulse buy provide additional support for the role of this mood state as a consequence of impulse buying for some subjects.

All three measures suggest an "excitement" mood is a consequence of impulse buying for many respondents. This mood was chosen by 29 percent of the sample as most likely to follow an impulse purchase, ranked second in mood likelihood scale score, and tied for first as mood following most recent purchase. Respondents reported being excited simply by having something new in their possession, illuminating their materialistic tendencies (Belk 1984). This combines

with the relative novelty of impulse buying per se to produce some giddiness and exhilaration. Respondents also described being excited and impatient about taking the object home to use it, to try it on, or to consume it. Basically the same ideas were echoed by the relatively fewer number of respondents (7%) who chose the "carefree" mood as most likely to follow an impulse buy. Both mood likelihood scores and respondents' moods after their last impulse buy provide additional support for the role of this mood state as a consequence of impulse buying for some subjects.

One mood that was considerably more prominent as an entry mood (Rook and Gardner, 1987) than as a post-purchase mood state was "powerful". This mood was selected by only 4% of the respondents as the mood most likely to follow an impulse purchase, ranked fifth in mood likelihood scale score, and was selected by less than 1% of the respondents as the mood consequence of their last impulse buy. Perhaps replacing some antecedent powerful moods are a growing sense of anxiety and guilt about having behaved impulsively. When asked to describe their mood following their most recent impulse purchase, just as many respondents said they were anxious and guilty (24 percent) as said they were feeling pleasure and excitement. Somewhat more limited support for the role of anxiety and guilt as consequences of impulsive buying is provided by respondents' choice of mood most likely to follow an impulse purchase (ranked fifth) and mood likelihood scale scores (ranked seventh). Post-purchase guilt and anxiety emerge in various forms. Some respondents say they feel a vague uneasiness as to whether they should have purchased or not. Others voice more specific guilt about overspending, failing to save, or buying something they "shouldn't have."

Discussion

The results of this study suggest mood factors play an extensive and complex role in consumers' impulse buying behavior. These findings raise as many questions as answers; much basic research remains. In addition, methodological considerations limit the

generalizability of the findings reported. Replications with more representative samples of respondents and extensions with different data collection procedures are warranted.

Additional research is also needed to investigate the effects of individual-difference variables on mood states that follow impulse buying. One variable of particular interest is mood stability. Almost everyone appears to experience positive moods after an impulse purchase (due to product satisfaction, quenching an urge, etc.). Because people whose moods fluctuate experience a wider range of moods, they may be more likely to experience negative moods after impulse purchases as well. Support for this postulate is provided by preliminary examination of the data in this study.

Additional research is also needed to investigate the role of cultural factors in determining mood after impulse purchases. If one's culture advocates spontaneity and self-indulgence, one might feel better after spending than if one's upbringing says that such behaviors are sinful.

Further work is needed to investigate the interplay between the consumer's thoughts immediately preceding purchase and his / her feelings immediately after. One might postulate that when thoughts are materialistic or narcissistic they may involve basic values and be relatively central to one's self-definition. In contrast, situational thoughts may be relatively mundane and related to externally determined, expected, or temporally distant usage occasions. If this is so, materialistic and narcissistic thoughts may be associated with post-purchase moods involving high arousal (e.g., excitement), and situational thoughts may be associated with post-purchase moods involving relatively low arousal (e.g., pleasure). Some support for this is provided by the data, but further research is needed.

Research is also needed to investigate the relationship between antecedent moods and post-purchase moods to observe, on a micro level, which transitions are more or less likely. Research in this area can provide ideas for understanding the role of impulse buying in the mood changes people regularly experience in daily living and the nature of mood changes themselves.

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The Effects of Advertisements on Consumers' Mood States: An Interactive Perspective

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Abstract

Current literature in the mood area has focused on the ability of advertisements to elicit particular mood states or on the effects of mood on the processing of information contained in ads. However, this research stream has neglected the possible interactive relationship between the current mood of consumers and the mood intrinsic to and the information contained within the advertisement. This paper discusses possible mood management strategies of consumers when they evaluate advertisements and presents a simple framework for understanding this phenomena.

Introduction

Few consumer researchers doubt the pervasive and important influence that mood has on the processing of information and decision making by consumers. Strong evidence suggests that individual choice behavior can be based on affective as well as rational factors (Zajonc 1980). Further, the impact of mood states on the consumer decision process appears to be a function of the valence of the current mood (Gardner and Hill 1986).

Most of the studies that have investigated the role of mood or emotion in advertising have looked at the ability of ads to elicit different affective states (Holbrook and O'Shaughnessy 1984). This work has popularized the "attitude toward the ad" stream of research which typically views this construct as an intervening variable that mediates the effects of the advertising message on brand attitudes and preferences (Edell and Burke 1984). According to this perspective, the purpose of many ads is to create a favorable ad attitude by leaving the viewer/listener/reader in a positive emotional state after processing the ad (Hill and Mazis 1985). The assumption underlying this approach is that consumers are hedonistically motivated by the desire to feel good (Hirschman and Holbrook 1982).

Other investigations have looked at the effects of consumers' current affective states on subsequent evaluations of advertisements (Milberg and Mitchell 1984). The ads used in these studies are primarily informational and subjects' moods are manipulated outside the context of the ad. Evidence suggests that mood may impact the encoding and retrieval of information contained in an ad (Srull 1984). For example, consumers who are in positive moods upon exposure to an advertisement should encode favorable information about the advertised brand. This may result in more positive brand attitudes than would occur under different mood-related conditions.

The gap in our current knowledge involves an understanding of both effects simultaneously. In particular, how does a consumer's mood state interact with the mood and information contained in an advertisement to produce ad and brand attitudes? The answer to this question is the purpose of this article.

Rationale

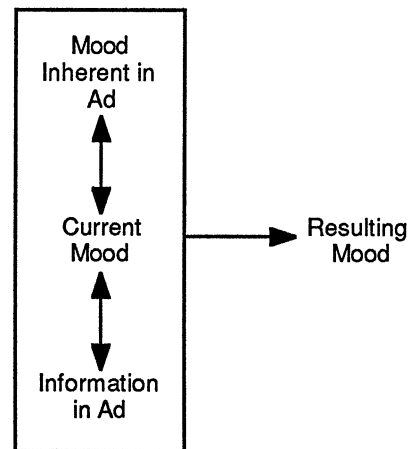
Consumer behavior which is motivated by affective desires has been termed "hedonic consumption" (Holbrook and Hirschman 1982, Hirschman and Holbrook 1982). The basis of this approach is that the

search for emotional arousal is an important motivation for individuals when selecting products to consume. Implicit to this perspective is the assumption that consumers consciously or unconsciously utilize the buying process to manage their moods (Hill and Gardner 1986).

Recent evidence suggests that consumer behavior activities may result in the extension of an individual's positive mood or the transformation of his or her negative mood. In a study by Gardner and Hill (1986), subjects in positive moods who used an experiential strategy had more positive post-processing moods than those who used an informational strategy, and subjects in negative moods who used an informational strategy had more positive post-processing moods than those who used an experiential strategy. Interestingly, subjects in positive moods were more likely to use an experiential strategy than those in negative moods, and subjects in negative moods were more likely to use an informational strategy than those in positive moods. This finding suggests that subjects may have been employing a mood management strategy during decision making.

The two elements of an advertisement that have the potential to impact a consumer's mood are the mood inherent to the ad and the non-attribute and attribute-based information contained within the ad (Mitchell 1985). Both elements interact with the consumer's current mood to influence his or her resulting affective state. Diagrammatically, this relationship might take the form shown in Figure 1.

Figure 1
The Impact of an Advertisement on a Consumer's Mood State



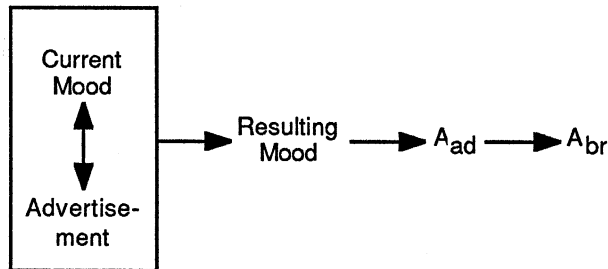
These ad components may work similarly to the hedonic and utilitarian affective attitude elements suggested by Batra (1986). Through the process of empathy, the mood inherent to the ad may act to reduce, maintain, or improve the mood of the receiver (Hill 1987). This could be characterized as the hedonic affective response of the consumer. Further, the information contained in the ad may act to reinforce this mood (non-attribute information) or may be used by the

receiver to evaluate the advertised brand's potential to impact current and future mood states (attribute-based information). This could be characterized as the utilitarian affective response of the consumer. Gardner (1985) provides additional support for the dichotomous nature of advertisements by suggesting that ads designed to impact mood states contain two elements - cognitive mood inducers such as positive or negative statements (information) and non-cognitive mood inducers such as scary or happy music (inherent mood).

Mood Management Strategies for Advertisements

According to the mood management perspective, consumers should prefer advertisements that have the desired impact on their current moods (Mitchell 1985). Specifically, consumers in positive moods whose moods are extended after exposure to an advertisement will have more positive ad and brand attitudes than individuals whose moods are not extended. On the other hand, consumers in negative moods whose moods are transformed after exposure to an advertisement will have more positive ad and brand attitudes than individuals whose moods are not transformed. A diagrammatic representation of this relationship might take the form portrayed in Figure 2.

Figure 2
The Effects of the Interaction Between a Consumer's Mood State and an Advertisement on A_{ad} and A_{br}



The mood management approach provides some insight into the relationship between resulting mood and ad and brand attitudes. What is not clear is *how* the mood and informational components of an advertisement interact with a consumer's current mood to produce his or her resulting mood state. The following subsections provide a general discussion of this relationship for both positive and negative pre-processing mood conditions.

Positive Pre-Processing Mood Conditions

As mentioned previously, consumers prefer advertisements that extend their positive mood states, and both the mood and informational components of an ad have the ability to accomplish this task. With regard to mood inherent to the ad, it can be characterized as consistent (i.e., positive) or inconsistent (i.e., negative) with the consumer's positive affective state. Since consumers may empathically acquire the ad's mood, they should prefer ads with consistent moods. Another issue involves the intensity of mood. Although the consumer behavior literature suggests that individuals have a limited tolerance for arousal (Hill 1987, Ray and Wilkie 1970), this principle has been applied solely to negative mood conditions. Therefore, it will be discussed only in the negative pre-processing mood subsection.

In terms of the informational content of an ad, the non-attribute information also can be characterized as consistent (i.e., positive statements) or inconsistent (i.e., negative statements) with the consumer's positive affective state (Gardner 1985). However, the attribute-based information may be positioned somewhat differently. Mizerski, White, and Hunt (1984) suggest that "emotion as a benefit" is a viable and widely used product positioning strategy in advertisements. However, including attempts to demarket products such as tobacco and liquor, "emotion as a cost" should be included as a potential advertising positioning strategy. Thus, attribute-based information might suggest that consideration, purchase and/or consumption of the advertised product may lead to positive or negative emotional outcomes.

Therefore, consumers in a positive pre-processing mood should prefer the blend of ad characteristics shown in Figure 3 to all other possible combinations since it should be perceived to have the highest probability of extending their current mood states.

These are also the ad characteristics that advertisers should utilize if they anticipate that consumers will be receiving their advertisements in positive pre-processing moods due to vehicle source effects. However, if advertisers wish to demarket a product, they may choose to use an entirely different strategy. Their goal might be to produce the most negative possible resulting mood and associate this mood with the product category under consideration. This strategy is portrayed in Figure 4.

Negative Pre-Processing Moods

Most of the ad characteristics that may impact a consumer's mood can be described similarly for negative pre-processing moods. For example, the mood inherent to the ad can be characterized as consistent (i.e., negative) or inconsistent (i.e., positive) with the consumer's negative affective state. Also, non-attribute information can be characterized as consistent (i.e., negative statements) or inconsistent (i.e., positive statements) with the consumer's negative affective state.

Differences, however, exist for attribute-based information. For negative pre-processing moods, "emotion as a benefit" is the product's perceived ability to transform negative affective states, and "emotion as a cost" is the product's perceived ability to extend unpleasant negative moods. Further, the optimal mix of ad characteristics differs according to the level of intensity of consumers' pre-processing moods. If their negative pre-processing moods are very intense, consumers may not be able to cope with these feelings. This situation may lead to a preference for ads with inconsistent moods and inconsistent non-attribute information so that they may escape from their current affective states. However, if the level of intensity of their pre-processing moods is in the moderate range, consumers may prefer ads that are consistent with their current moods in terms of mood and non-attribute information since these ads provide a justification for their feelings. Also, they may prefer ads that additionally provide attribute-based information in the form of emotion as a benefit as described above. Both negative pre-processing mood scenarios are diagrammatically illustrated in Figure 5.

Figure 3
Optimal Advertising Strategy for Consumers in Positive Pre-Processing Moods

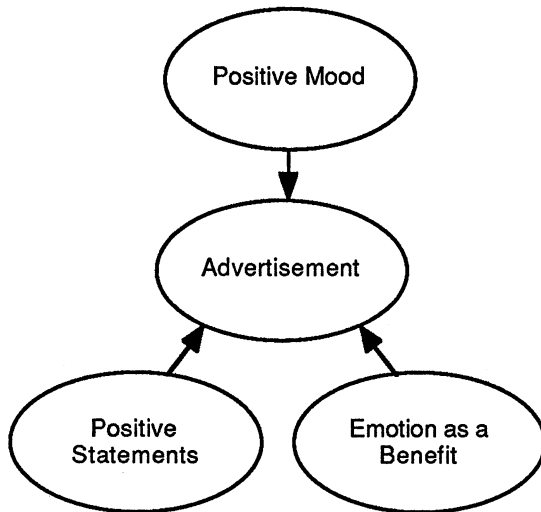


Figure 4
Optimal (Demarketing) Advertising Strategy for Consumers in Positive Pre-Processing Moods

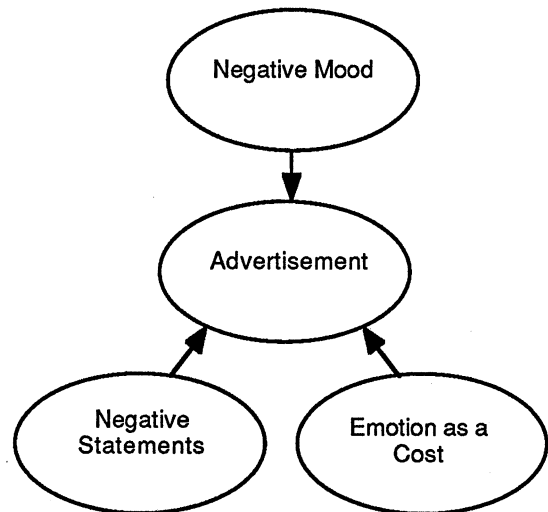
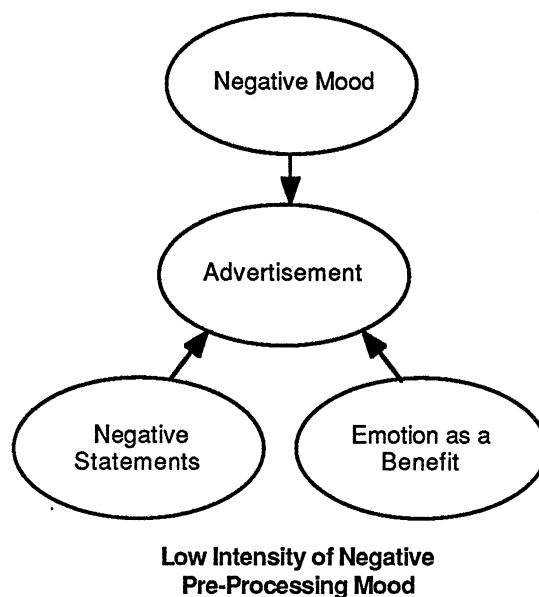
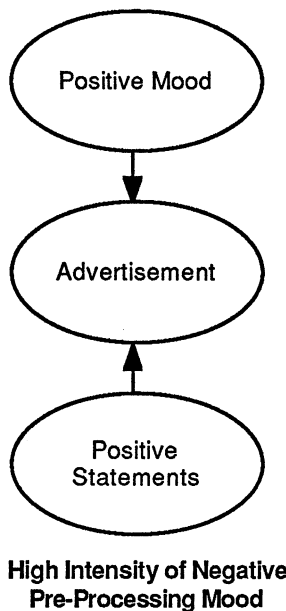


Figure 5
Optimal Advertising Strategy for Consumers in Negative Pre-Processing Moods



Once again, the best strategy for advertisers to pursue is consistent with the mood management needs of consumers. If advertisers expect that consumers will be experiencing negative pre-processing moods of high intensity (due, potentially, to vehicle source effects), they should develop ads containing positive moods and positive non-attribute information. On the other hand, if advertisers expect that consumers will be experiencing negative pre-processing moods of moderate intensity, they should develop ads containing negative moods, negative non-attribute information, and attribute information that creates the impression that

consideration, purchase and/or consumption of their products will lead to a transformation of consumers' current affective states.

Discussion

This paper suggests that consumers prefer advertisements which help them manage their current moods by aiding in the extension of positive affective states and the transformation of negative affective states. Further, successful use of mood manipulation by advertisers may depend on their ability to facilitate this

process. The following are propositions based on this perspective.

Proposition 1a: Consumers experiencing positive pre-processing moods prefer advertisements which contain positive moods, positive non-attribute statements, and attribute-based information suggesting emotion as a benefit.

Proposition 1b: The mix of ad characteristics suggested in proposition 1a will result in more positive mood states than any other possible combination for consumers experiencing positive pre-processing moods.

Proposition 1c: The use of advertisements which contain negative moods, negative non-attribute statements, and attribute-based information suggesting emotion as a cost will result in more negative mood states than any other possible combination for consumers experiencing positive pre-processing moods.

Proposition 2a: Consumers experiencing high intensity of negative pre-processing moods prefer advertisements which contain positive moods and positive non-attribute statements.

Proposition 2b: The mix of ad characteristics suggested in proposition 2a will result in more positive mood states than any other possible combination for consumers experiencing high intensity of negative pre-processing moods.

Proposition 3a: Consumers experiencing moderate intensity of negative pre-processing moods prefer advertisements which contain negative moods, negative non-attribute statements, and attribute-based information suggesting emotion as a benefit.

Proposition 3b: The mix of ad characteristics suggested in proposition 3a will result in more positive mood states than any other possible combination for consumers experiencing moderate intensity of negative pre-processing moods.

Of course, there are other issues that need to be addressed regarding the relationship between pre-processing mood and ad characteristics. For example, what properties of mood (i.e., valence and intensity) have the potential to trigger mood management strategies on the part of consumers? Also, once mood management strategies are triggered, do consumers actually search for ads which have the potential to affect their moods in desirable ways or are they passive recipients of advertising messages which happen to be in their personal environments?

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Promotional Games: The Effects of Participation on Mood, Attitude, and Information Processing

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Abstract

Participation in promotional games may influence mood and mood may influence reaction to promotional games. This paper discusses how the major stages of promotional game participation--the decision to play, the process of play, and the consequences of play--interact with mood. The discussion focuses on the affective consequences of game participation, and reports a test of a set of five hypotheses that predict that winning or losing a promotional game will affect mood, attitude toward the promoted product, attitude toward the vehicle that delivered the promotion, evaluation of the game, and intention to participate in a later game. The results confirmed that a win or loss could influence mood, attitude, and likelihood of further game participation.

Introduction

The popularity of promotional games has surged in the 1980s. Marketers of products from automobiles to candy bars are relying upon games as crucial parts of their promotional strategy (Jagoda, 1984; Feinman et al., 1986). In 1986, Incentive Marketing estimates that marketers gave away over \$240 million on promotional sweepstakes--a 7 percent increase from the year before (Borowski, 1987).

To a consumer researcher interested in affect, promotional games are interesting because of their similarity to mood manipulations which involve a win or loss, positive or negative feedback, or unexpected gifts (For examples of studies using such manipulations to induce mood, see Isen and Means, 1983; Isen and Shalcker, 1982; Isen, Shalcker, Clark, and Karp, 1978). Like these manipulations, the outcome of promotional games should be capable of creating a positive or negative mood which may in turn influence attitude toward the promoted product, the product's marketer, and the vehicle through which the promotion was conveyed (e.g., a newspaper, magazine, or store). Isen and Means (1983) found that a positive mood induced by false test feedback had significant effects on subjects' search and

decision-making behavior in an automobile choice task. This suggests moods induced by promotional games may also affect brand selection strategies.

Despite the likelihood that promotional games affect mood, little or no research has investigated this issue. This paper will discuss how games might affect mood and the possible consequences of such effects. Although the paper will focus on how games influence mood, the probable effects of mood on consumers' propensity to play games, their perception of games, and their reaction to the outcome of games will not be ignored.

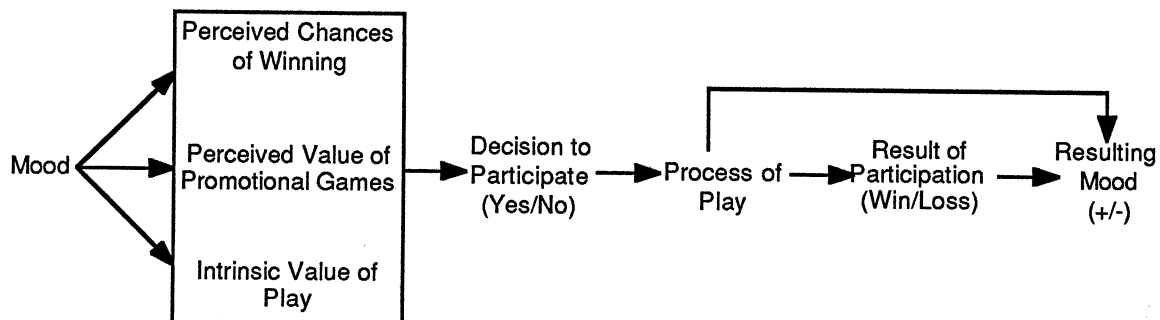
Overview

A conceptual model of the interaction between mood and promotional games appears in the Figure. "Promotional games" include sweepstakes and contests. In a sweepstakes, the winners and losers are determined randomly. In a contest, the winners and losers are determined by judging the skill with which they have performed a task. As indicated in the Figure, a consumer's interaction with a game begins with a decision to participate or not. This decision is influenced by at least three factors: the perceived chances of winning, the value of potential prizes, and the value of play itself. Of course, in a particular situation, other factors (e.g., the convenience of entry) may be relevant; however, the factors noted in the diagram seem to be the most likely to interact with mood.

Once consumers decide to participate, they proceed to play. The process of play may take a few seconds (to rub off an "instant winner" panel), a few minutes (to do a puzzle), or months (to build a collection of winning tokens). In any case, the Figure suggests the process of play may have significant effects on mood.

After the game is played, consumers usually get feedback about whether they have won or lost, and may receive a prize. The Figure suggests that winning or losing is likely to influence the consumer's mood positively or negatively. The major issues suggested by the figure will be discussed in the next sections.

Figure
The Interactive Relationship Between Mood and Promotional Games



The Decision to Participate

The decision to participate is the first step in playing a promotional game. Marketers deliver offers to participate in promotional games by virtually every advertising vehicle: direct mail, newspapers, magazines, radio, television, and in-store. In each case, the delivery vehicle could be designed to affect consumers' moods. For example, in a direct mail promotion, a free gift could be enclosed with the offer to participate.

If the vehicle affects consumers' moods, it may influence their decision to participate in the promotional game. As the Figure shows, mood is likely to influence the perception of each major factor mediating participation: perceived risk of entry, perceived value of prizes, and perceived hedonic value of playing.

Perceived Chances of Winning or Losing

In general, positive affect appears to increase the perceived probability of positive events (e.g., winning) and negative affect appears to increase the perceived probability of negative events (e.g., losing) (Johnson and Tversky, 1983). However, if the consumer perceives the decision to participate in a promotional game as taking a risk of loss, the relationship between mood and the decision may be more complex. Participants may perceive entering a promotional game to entail the possibility of several kinds of loss including the loss of self-esteem, of time, and of the money spent to buy a product.

Mood and the degree of possible loss (small or large) appear to interact in influencing risk-taking behavior. Positive affect appears to encourage people to take small risks but not large risks. For example, Isen, Means, Patrick, and Nowicki (1982) and Isen and Patrick (1983) found subjects whose mood was elevated by such manipulations as being given a \$.50 McDonald's gift certificate were more willing than controls to take a relatively small gamble or a social risk. However, if a significant loss is possible, positive affect may appear to decrease the likelihood that people will incur the risk. In one of Isen and Patrick's (1983) studies, participants were given the opportunity to bet part of the points they earned for participating in the experiment. The only available bet was risky--a 17% chance of winning and an 83% chance of losing the points. In this situation, participants who had been exposed to a positive mood manipulation bet less than controls.

For marketers, the implications are that positive affect might be most effective in inducing consumers to play games in which they have a high probability of winning and the risk of a loss (e.g., to their self-esteem) is low.

Value of Prizes

Consumers who are feeling good may perceive potential prizes as better (e.g., more valuable) than those in a less positive mood. For example, this is suggested by Isen et al.'s (1978) finding that consumers who had received a small gift provided more positive evaluations of a variety of goods than consumers who did not receive such a gift.

Mood may also have less obvious effects on how consumers value prizes. For example, consumers in a positive mood may be motivated to continue having fun whereas consumers in a negative mood may be motivated to feel better. In either case, consumers might value a prize perceived as indulgent and fun (e.g., a box of

imported chocolates) more than a utilitarian prize (e.g., a dictionary). The possibility that people rely on consumption activities as a means of affect control is supported by Berneman and Heeler (1986) who found that consumers sometimes shop for clothes to reinforce a positive mood or alleviate a negative mood.

Hedonic Value of Play

A consumer's mood is likely to influence the hedonic value he or she perceives in playing a game. Consumers in a positive mood might perceive playing an amusing game as a means of maintaining their mood. On the other hand, consumers in a negative mood might play a game to cheer themselves up. Thus, whether consumers are anticipated to be in a positive or negative mood, games should be designed so they look like they are fun to play. Practitioners appear to recognize this. For example, Feinman, et al. (1986), president of a major promotional games consulting firm, comments that, "of prime importance in creating game cards is that you make them look like FUN" (p. 109).

Process of Play

If a consumer decides to participate, the next stage is interaction with the game. The possible affective consequences of playing a game are illustrated in a study by Holbrook, Chestnut, Olivia, and Greenleaf (1984). In the study, MBA students played verbal or visual versions of a "lunar lander" game, the object of which was to safely "land" a "space vessel." The players received continuous performance feedback but no tangible rewards or penalties for success or failure. Nevertheless, players who performed better reported experiencing more "pleasure" on Mehrabian and Russell's (1974) P.A.D. scale than those who performed worse. Studies of gamblers also suggest the process of play, instead of outcomes per se, can be reinforcing. For example, Kallick, Suits, Dielman, and Hybels (1979) found that 86% of a sample of gamblers listed "a good time" as one of their three most important reasons for betting on horses at a track. However, only 15% mentioned "a good time" as a primary reason for buying a lottery ticket.

These findings suggest that the process of playing a game can influence mood, and raise a number of issues about how aspects of play affect mood. The subject of the game, the degree to which play is involving, and the structure of performance feedback might all be influential. Little is known about these issues at present.

Consequences of Participation

The two principal consequences of playing a promotional game are winning or losing. Both outcomes may vary in degree and kind. In degree, a win or loss can be perceived as more or less important. For example, "winners" often receive prizes that are so insignificant that they may feel more like losers. In kind, the consequences of winning or losing may differ by the type of game. For example, participants might react differently to winning a game of skill versus a game of chance. Participants who win a game of skill might tend to attribute their success to ability, and thus feel a higher degree of self-efficacy, which in turn could affect their attitudes (e.g., toward purchase of an innovative product) and other aspects of consumer behavior.

Winning

Although most consumers lose promotional games, a few win and more could if the prize structure of games was changed. Thus, the consequences of winning a promotional game are interesting to consider. The results of studies that have used success/failure at a task or a free gift as mood manipulations provide a guide to the probable consequences of winning a promotional game (For examples of such studies see Isen and Means, 1983; Isen and Shalke, 1982; Isen et al., 1978). These studies indicate that subjects who receive success feedback or a gift are likely to feel more positive and thus rate stimuli more favorably than control subjects. Winners of promotional games also receive success feedback and usually receive money or a gift. Thus, winners are likely to feel better than losers, and have a better attitude toward the promoted product, the game itself, the odds of winning the game, and perhaps the vehicle that delivered the opportunity to play the game. Winners might also tend to feel better about themselves, and this feeling of greater self-efficacy (Bandura, 1977) might influence their information search and decision-making behavior. As suggested earlier, winning a game, particularly a game of skill, is likely to influence the winner's perceived self-efficacy (Bandura 1977).

A study by Hill and Ward (1987) supports the possibility that playing a game can have significant effects on mood, perceived self-efficacy and information search behavior. In this study, participants were asked to play and evaluate a promotional game. As part of the cover story, they were told the game, "Mutant Robots from Outer Space," was part of a promotion sponsored by an automobile dealer. Participants were randomly assigned to either a luck, skill, or control condition. Participants in the luck conditions were told that a win or loss would depend on chance; those in the skill condition were told that success or failure would depend on ability. After completing the game, participants in both the luck and skill conditions were told that they had performed better than usual at the task regardless of their actual performance. Participants in the control condition played the game but received no feedback.

After receiving feedback, subjects were asked to answer a series of questions that were introduced as measures of their reaction to the game. These measures included Peterson and Sauber's (1983) Mood Short Form (MSF), measures of their perceived self-efficacy, and a mock automobile decision-making task. In the latter task, subjects were asked to choose one of six automobiles for purchase. They were given an empty information matrix listing the alternative cars along the top and the attributes along the side, and told to request whatever information was necessary for their decision.

The results showed that subjects who won the promotional game had significantly more positive mood scores than control subjects, regardless of whether the win was attributed to luck or skill. Attribution of success to luck or skill resulted in no significant difference in mood scores between groups. However, other differences between the luck and skill groups emerged. The skill group scored significantly higher than the luck group on measures of perceived self-efficacy in automobile purchasing ability and self-confidence in automobile purchasing ability. On the decision-making task, the skill group took significantly longer to decide on an automobile, checked more bits of information, and checked more attributes than the luck group. These

results suggest that subjects' attributions about why they won or lost (e.g., because of luck or skill) can have significant effects on subsequent behavior.

Losing

Most consumers who play promotional games lose. Even in a chance drawing, the consumer loses something tangible, the effort of entering and the hope for a reward that motivated the entry. The loser of a contest, a game of skill, is likely to feel an additional loss of his or her sense of competence. These observations suggest that the loss of a promotional game may tend to create a negative mood. If so, the possibility arises that the conduct of a game might, in aggregate, generate more negative than positive affect toward a product. In terms of sales, the negative affect experienced by losers might not be immediately apparent because most lose after buying the product or service. But over time a loss or series of losses could undermine a consumer's image of a product and loyalty toward it. The negative affect created by losing a promotional game might also tend to lower the loser's perceived self-efficacy and thus effect search and decision-making behavior.

The negative effects of losing raise the issue of what can be done to lessen the problem. One possibility is to design games that let everyone win at least a small prize or a chance to participate in a later drawing. Past studies suggest that even small prizes such as a pencil or notebook can have positive effects on mood. Such "consolation" prizes might lessen or cancel any negative affect resulting from a loss.

Hypotheses

The issues reviewed so far have suggested several hypotheses about how promotional games interact with affect states. As a start toward addressing these issues, an exploratory study was conducted.

These hypotheses focus on the affective consequences of game outcomes. The first issue is whether winning or losing a promotional game effects mood. Prior studies in the mood literature suggest success feedback, a small gift, or a combination thereof should create a significantly better mood than failure and no reward.

H₁: Winning a promotional game should result in a more positive mood than losing.

The mood resulting from a win or loss should color consumers' attitude toward the product the game promotes and perhaps the store or advertising vehicle used to deliver the game. Past studies have shown that mood can influence product ratings (Isen et al., 1978) and the evaluation of other stimuli.

H₂: Winners will evaluate the product the game promotes more favorably than losers.

H₃: Winners will evaluate the vehicle that distributes the game (e.g., a store) more favorably than losers.

Finally, the mood resulting from a win or loss may affect perception of the game itself. Winners are likely to be more satisfied with the game than losers, and perceive

the odds of winning future trials of the game to be higher.

H4: Winners will evaluate a game more favorably than losers.

H5: Winners will perceive the odds of winning subsequent games to be higher than losers.

Study Design

Overview

To test the above hypotheses, an experiment was designed that varied whether student participants won or lost a mock promotional game. As a cover story, the experimenter told subjects that they would be "evaluating a promotional game designed to boost the sales of Hershey's New Trail Granola Bars at convenience stores." The game was an "instant winner" promotion in which subjects could win or fail to win \$2.00 cash. The win or loss of the game was intended to vary the participants' mood.

After playing the game, subjects filled out measures of their mood, their attitude toward the promoted product, their attitude toward convenience stores, and their evaluation of the game itself. Participants also indicated how likely they would be to enter a subsequent sweepstakes. Finally, as an exploratory question, participants were asked which of the following prizes they would prefer if they won the sweepstakes: 1) a \$1,000 cash or 2) a savings certificate that would be worth \$2,500 in 5 years but could not be cashed until then. The purpose of this question was to see whether participants in a better mood would be more likely to prefer a larger delayed reward to a smaller immediate reward. Previous studies of children suggest that a more positive mood encourages delayed gratification (Seeman and Schwarz, 1974; Fry, 1975; Moore, Clyburn, and Underwood, 1976). The alternative prizes were chosen so that the value of the \$1,000 in cash would only be equal to the \$2,500 savings certificate if students assumed they could invest the \$1,000 at a 20% after tax rate of return for five years.

Participants

The participants were 51 undergraduate marketing students at a large southwestern university. All the students in two classes participated during regularly scheduled class time. They were not given any incentive to participate beyond the chance to win money.

Procedure

To assign subjects to the win and loss conditions, the questionnaires were stacked in a randomized order and then handed to subjects sitting at classroom desks.

The first pages of the questionnaire simply repeated the instructions that will be described below. The second page was the "front" of a prototype game card that contained a slogan and the instructions, "Be an instant winner. Rub off the panel on the back. If you see '140 calories,' you win \$2." The third page was the "back" of the game card that either listed "140 calories" or "XXXXX." The fourth page of the questionnaire was an envelope that contained \$2.00 cash or nothing. Questionnaires were sealed with tape to prevent students from looking ahead. The rest of the pages were rating

scales designed to measure mood, attitudes, and reaction to the game.

The experimenter began the instructions by repeating the cover story noted earlier. He went on to say:

You will see a photocopy of a prototype game card. The game card will have a front, shown on the next page, and a back, shown on the page after next. The front instructs consumers how to play the game. The card tells consumers that New Trail Granola Bars have only 140 calories each--less than half a typical candy bar. The card goes on to suggest that consumers can be "instant winners" by rubbing off a panel on the back of the card. If the panel says "140 calories," the consumer instantly wins \$2.00 cash (paid by the cashier). If the panel says anything else, the consumer wins nothing. When you are asked to turn the page, read the front of the "game card," and then turn the next page to the "back" of the "game card" to see if you are an instant winner--the panel has already been rubbed off for you.

Of course, whether you win or lose is determined by chance.

If you win, an envelope enclosed in your questionnaire after the game card will contain \$2.00 cash. The cash is yours to keep. If you lose, you will receive nothing. After playing, please answer some questions following the game.

The experimenter then instructed the students to break the seal on the questionnaire, play the game, and then answer the questions.

Dependent Measures

Mood was measured by Peterson and Sauber's (1983) Mood Short Form (MSF) which consists of four statements which participants responded to on a 5 point "strongly disagree" to "strongly agree" scale.

Attitude toward the promoted product, granola bars, was measured by four nine-point bipolar scales with endpoints "good-bad," "healthy-unhealthy," "high calories-low calories," and "poor taste-good taste." The overall measure of attitude toward granola bars was formed by summing ratings across the four scales.

Attitude toward convenience stores was measured by the sum of three nine-point bipolar scales with endpoints "friendly service-unfriendly service," "slow service-fast service," and "low prices-high prices."

Attitude toward the game was also measured by nine-point bipolar scales. The five scales had endpoints of "frustrating-soothing," "fun-boring," "unfair-fair," "worthwhile-worthless," and "irritating-relaxing." Once again, ratings across the scales were summed.

Next, the questionnaire asked "suppose that you could write your name and address on your game card and turn it in as a sweepstakes entry (regardless of whether you won or lost). How likely would you be to enter the sweepstakes?" Subjects indicated their likelihood of entering on a nine-point bipolar scale with endpoints "extremely likely-extremely unlikely."

Results

Hypothesis one predicted that winning a promotional game should result in a more positive mood than losing. This prediction was strongly supported. Winners reported a mean score of 10.6 on the MSF in

contrast to a mean score of 6.9 reported by losers, $t(49) = 4.32, p < .01$.

The difference in mood between groups is interesting to compare to the norms reported by Peterson and Sauber (1983). Across three mail panel surveys, they found that mean MSF scores varied between 7.8 and 8.2. By comparison, winners of the present study scored higher than these norms and losers scored lower. A univariate t-test showed that 10.6 is significantly higher than 8, the midpoint of the norms noted above, $t(26) = 3.7, p < .05$. Another univariate t-test showed that 6.9 is significantly lower than 8, $t(23) = 1.80, p < .05$. The comparisons to Peterson and Sauber's data suggest that winning created a "good" mood and losing created a "bad" mood.

As predicted, the between group mood differences were related to between group attitude differences. Hypothesis two predicted that winners of the game would have a more favorable attitude toward the promoted product than losers. Winners reported a mean attitude score of 27.9 in contrast to losers who reported a score of only 23.1, $t(45) = 3.26, p < .01$.

Hypothesis three predicted that winners would report a better attitude toward the store sponsoring the promotion than losers. This hypothesis was not confirmed. The mean attitude score of winners was 20.2, barely higher than the mean score of 20.0 reported by losers, $t(49) = .24, p > .05$. The failure to confirm hypothesis two has several plausible explanations related to the experimental situation and the measure of attitude toward the store. In the cover story, the experimenter mentioned that the promotional game was being evaluated for possible use in a major chain of convenience stores. (The chain was specifically identified.) However, the name of the chain was not mentioned again, in contrast to the name of the sponsoring product which was mentioned twice in the instructions and repeated twice on the "game card." Therefore, the association between the game and the sponsoring store may have been rather weak to many subjects. Furthermore, the game was conducted in a classroom, not a convenience store. Both these factors suggest that the effect created by winning or losing might have been less likely to color perception of the sponsoring store than the sponsoring product. The measure of attitude toward the store might also have been at fault. The measure asked participants to rate "convenience stores"--not the specific chain mentioned as the sponsor--on three bipolar scales, "friendly service - unfriendly service," "slow service - fast service," and "low prices - high prices." The connection between attitude toward the sponsoring convenience store and attitude toward convenience stores in general may have been too weak to reveal significant effects.

In contrast to this disappointing result, hypothesis four was confirmed. Hypothesis four predicted that winners would evaluate the game more favorably than losers. The results show that winners had a mean score of 35.4, significantly higher than 28.8, the mean score of losers, $t(49) = 4.09, p < .01$.

Hypothesis five predicted that winners would report a greater likelihood of entering a subsequent sweepstakes than losers. Once again, the results confirmed this tendency. Winners reported a mean likelihood of entering a later sweepstakes of 5.4. Losers reported a significantly lower mean likelihood, 3.6, $t(49) = 2.32, p < .05$.

A question included for exploratory purposes asked participants to indicate which prize they would prefer to win if they entered a follow-on sweepstakes. The choice was between \$1,000 cash and a saving certificate that would pay \$2,500 in five years but could not be cashed until then. The results show that participants, whether winners or losers, overwhelmingly preferred a more immediate reward. About 80 percent chose the \$1,000 cash. This preference could not have been motivated by a formal appreciation for the present value of money. The \$1,000 would have to be invested at an annual rate of return of 20 percent after tax to equal \$2,500 in five years. Comparison of the winners and losers revealed that a higher proportion of winners choose the delayed reward (26%) than losers (12%) but this difference was not significant, $t(49) = 1.27, p > .05$. Since the difference was in the expected direction, further research on this phenomena might be justified.

A problem in the interpretation of the study's results is whether the effects on the attitude and likelihood of further participation measures should be attributed to mood differences or other factors such as a favorable attitude toward the product created simply by associating winning with the product. Although this interpretation cannot be dismissed, the mood difference between groups was highly significant and no doubt contributed to the observed differences.

Discussion

In summary, the paper reviewed the major steps in promotional game participation--the decision to play, the process of play, and the consequences of play--and discussed the relation of affect to each stage. Focusing on the affective consequences of game outcomes, the paper reported a test of a set of five hypotheses that predicted that winning or losing a game would have significant effects on mood, attitude toward the promoted product, attitude toward the store sponsoring the promotion, evaluation of the game, and likelihood of further participation in the game. The results supported the hypothesized effects except for the attitude toward the store measure. Possible explanations for this exception were discussed.

Implications

The possible interaction between mood and participation in promotional games has a variety of implications for marketers. The designer of a promotional game should consider the interaction between mood and the game at each major stage of participation in order to maximize the positive affective consequences of participation and minimize the negative affective consequences. For example, an important implication of this study is that losing a game may have negative effects on mood and other variables such as attitude toward the promoted product. This possibility suggests that games should be designed so that more participants feel like winners than losers. For consumers who lose, the negative effects of loss might be alleviated by offering consolation prizes or encouraging attribution of the loss to extrinsic factors such as bad luck.

Future Research

Each stage of game participation suggests issues for further research. At the initial stage of the decision to participate, issues such as the influence of mood on the perceived value of prizes, the value of play, and the probability of winning require further research in a

gaming context to develop specific guidelines for practitioners. The interaction between the process of playing a game and mood could be further understood by studies of how different types of games and aspects of their play influence mood. Finally, the impact of game outcomes on mood and other variables needs to be further understood by studies of factors that influence the strength of affective reaction to a win or loss (e.g., the degree to which a win was initially expected), the attributions consumers make for success or failure at different types of games, and the effects of series of losses and wins on mood and attitude toward game sponsors.

Studies of how individual differences influence game participation, play and reaction to outcomes could also yield interesting insights. For example, studies of state lottery players indicate that lower income players tend to prefer games with lower jackpots but higher odds of winning (Edmondson, 1986). In contrast, higher income players tend to prefer games with large grand prizes but far lower odds of winning. Demographic and personality differences might also influence consumers' preferences for promotional games.

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Elderly Life Satisfaction and Television Viewership: An Exploratory Study

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Abstract

We hypothesized that heavy TV users among the elderly are more dissatisfied with their lives than light TV users. This may be because those elderly who are heavy TV users may cultivate unrealistic beliefs about the material possessions of the average person. Heavy TV users thus may compare their lack of material possessions to their unrealistic beliefs of the average person having material possessions, resulting in dissatisfaction. Since material possessions are highly valued in our culture, these feelings of dissatisfaction may become more global and generalizable to other life domains. An empirical study was conducted using a sample of 788 elderly subjects to test the relationship between the extent of TV viewership and elderly life satisfaction. The results were consistent with the hypothesis. Future research directions are also presented.

Background

Media critics argue that people's construction of social reality is a function of media exposure. This phenomenon is referred to as the "cultivation hypothesis" in the media literature (see Hawkins and Pingree 1981 for a review). More specifically, media studies related to television (TV) effects have demonstrated that heavy viewers of TV have higher expectations of being crime victims than do light viewers (Gerbner et al. 1980a; Doob and MacDonald 1979). When asked how many older people there are in America, heavy TV viewers report a lower incidence than light TV viewers (Gerbner et al. 1980b).

The cultivation hypothesis suggests that heavy TV viewers may cultivate unrealistic beliefs about people and their surroundings. More particularly, the heavy TV viewers may cultivate beliefs that suggest most people are well-off and enjoy many of the material things in life. To the extent that TV media shows images of materially well-off people, heavy TV viewers may overestimate the material well-being of the average person (Belk and Pollay 1985a, 1986b; Friedman 1985; Richins 1987).

Given that heavy TV viewers have unrealistic beliefs about material possessions and the use of these possessions in personal fulfillment, we would expect that heavy TV viewers would be more likely to experience life dissatisfaction than satisfaction.

This is because social comparison theory (Festinger 1954; Goethals and Darley 1977) tells us that people compare themselves to the average person. The heavy TV viewer may perceive his/her material possessions to fall below his/her belief about the average person's possessions, resulting in dissatisfaction with his/her situation. Given that material possessions are highly valued in American culture (Belk 1984; 1985; Dubois 1955) we should expect heavy TV viewers to feel dissatisfied with their life accomplishments (since these accomplishments failed to produce a level of material possessions exceeding that of the average person).

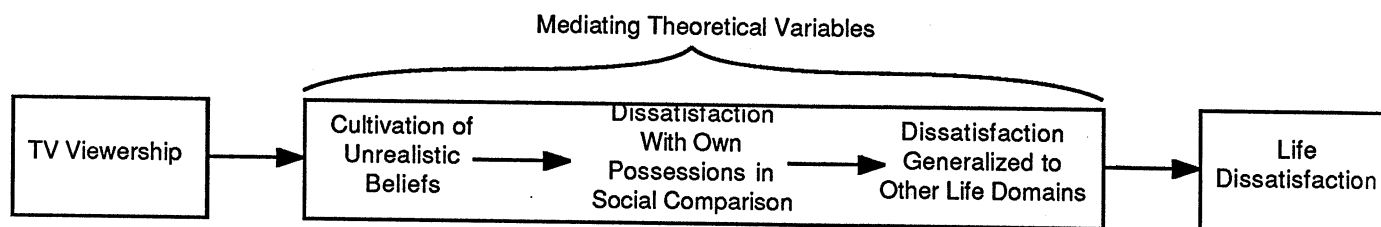
For the elderly person this dissatisfaction may be more acute than his/her younger counterparts. Studies have shown that (1) elderly consumers are heavy users of mass media for entertainment, news and information search (Comstock et al. 1978; Graney and Graney 1974; Havighurst and Albrecht 1953; Schramm 1969; Stevens 1981), (2) elderly consumers find their portrayal negative and are less than satisfied with how they are depicted (Doolittle 1977; Festervand and Lumpkin 1985; Harris 1975; Jamieson 1978; Samli and Palubinkas 1972), (3) elderly consumers have poor self-images (Davis 1971; Schrieber and Boyd 1980; Smith et al. 1982, 1984, 1985), (4) as consumers age they rely more and more on mass media, particularly TV (Festervand and Lumpkin 1985; Mason and Beardon 1978; Stevens 1981, 1982), and (5) as consumers age they become more accepting of mass media puffery, particularly any associated with advertising, due to declining information processing filtering ability (e.g., Atchley 1972; Botwinick 1978; Long et al. 1980; Neugarten and Havighurst 1976).

In other words, we postulate the following relationships pertaining to the elderly: (1) Heavy TV users cultivate more unrealistic beliefs about material possessions of the average person than light TV users. (2) Heavy TV users engage in social comparisons more than light TV users, comparing their lack of material possessions to the materially wealthy image of the average person cultivated through TV programming. (3) Heavy TV users feel more dissatisfied than light TV users as a result of this type of social comparison. (4) Heavy TV users' dissatisfaction with material possessions are generalized to other life domains resulting in life dissatisfaction, due to cultural valuation of material possessions. These relationships are shown in Figure 1.

These findings concerning the elderly's reliance on TV and being dissatisfied with life can be theoretically explained further by disengagement theory, activity theory, socialization theory, and social breakdown theory. Disengagement theory (Cumming and Henry 1961) posits that society and the elderly enter a process of normative voluntary mutual withdrawal from one another as a consequence of aging and that this leads to a reduction of social interaction and an increase in personal isolation. Once the social withdrawal is complete a new social equilibrium is established, which both society and the elderly find satisfying. The reliance on mass media, thus is a way to combat total social disengagement and helps in establishing a new social equilibrium (Schramm 1969).

Activity theory (Lemmon et al. 1972) suggests that the elderly are forced to disengage from society through forced social imposition. When faced with this social contraction of life space, the elderly will attempt to find alternative activities to fill the gap created by the forced loss of previous social roles. When activity alternatives are successfully found the elderly achieve a happier and more satisfying life situation. Thus, interactions with mass media provide the major source for activity substitution (Graney and Graney 1974).

Figure 1
How Does TV Viewership Affect Life Satisfaction?



Socialization theory (Dowd et al. 1981; Smith and Moschis 1984; Smith et al. 1982, 1984, 1985) posits that older people, "like their younger counterparts can be socialized" (Smith and Moschis 1984, p. 549). Thus, socialization is a continuous life span learning process, allowing a person to adapt to ever changing life conditions and life experiences by acquiring requisite social skills, and establishing ever changing personal cognitions, attitudes, and behavior. Regardless of the whether or not social disengagement is voluntary or involuntary, the elderly faces increasingly contracted life spaces, and as such one would expect that in order to adapt many elderly turn to the impersonal learning offered by mass media to make up for the loss of interpersonal social influencing contacts.

Social breakdown theory (Kuypers and Bengston 1973) posits that as a person gets closer to retirement he/she faces ambiguous roles (e.g., 'senior citizen?'). With the loss of social contact, this ambiguity actually becomes relatively clear, since the elderly eventually see few or no social/behavioral expectations associated with occupying a "roleless" senior citizen social position (Neugarten et al. 1968). And since this is the image that society projects upon the elderly the result is a greater sense of anomie. Thus, when negatively portrayed on TV programs and its advertising messages, many elderly learn a new sense of self-worth, which in turn causes a decrease in how they perceive their own lives.

A study is reported here to test the relationship between elderly life satisfaction and TV viewership. The mediating theoretical variables shown in Figure 1 will not be tested. They are used only for explanatory purposes only. Future research should be directed to including these mediating variables in a more comprehensive model and subjecting this model to empirical testing.

Methodology

Sampling

Data for this study were collected via a mail survey questionnaire sent to a random sample of elderly subjects in the mid-Atlantic region of the United States. More specifically, a sample of 3700 was drawn through a systematic sampling of a mailing list. The list itself was obtained from a government-sponsored agency. The mailing list of approximately 20,000 contained the names of households in the region with a member residing 60 years of age or older. Eight hundred and five of the questionnaires were returned reflecting a response rate of 22 percent. Seventeen of the questionnaires were unusable leaving 788 cases for data analysis, a 21 percent usable response rate. While the response rate is

not high, it is within the expected levels of single mailing consumer surveys (Kanuk and Berenson 1975).

While the study was conducted on a regional basis, the generalizability of the results is considered good. This is because the area of sample covered a three county area and included both rural and urban areas. Furthermore, the area has a demographic profile (more specifically with respect to sex and income) somewhat similar to that of the entire United States. A study conducted by National Planning Data (a local market research firm) using the 1980 U.S. Census provided the following breakdown of income and sex of residents 65 and over. With respect to income, 44.0 percent had an income of less than \$15,000/year (the study sample showed 41.0 percent), 26.9 percent had an income between 15,000 and 25,000 (the study sample showed 26.0 percent), 12.9 percent had an income between 25,000 and 35,000 (the study sample showed 14.0 percent), 8.9 percent had an income between 35,000 and 50,000 (the study showed 12.0), and 7.3 percent had an income of 50,000 and over (the study showed 8.0 percent). With respect to sex, 40.3 percent were males (the study showed 40.2 percent), and 59.7 were females (the study showed 59.8 percent).

Measure of TV Viewership

Respondents were asked to agree or disagree (on a 6-point Likert-type scale) to the following statement: "Television is my primary form of entertainment." This item was imbedded in the context of other psychological related items. Richins (1987) has reported results severely skewed toward heavy usage for the elderly using a frequency measure. Given this, it was felt that a psychological measure of TV usage would provide a more useful measure of TV viewership and perhaps a more normal distribution of scores than the frequency measure.

Measure of Life Satisfaction

The life satisfaction measure was initially made up of 12 self-report 6-point Likert-type items. More specifically, these were:

- I am happier now than ever before (+)
- I am content living where I am now (+)
- Maintaining my appearance is important (+)
- Everything is changing too fast today (-)
- My opinion isn't valued by others (-)
- I enjoy the physical pleasures of life (+)
- Not many people respect senior citizens (-)
- I feel old (-)
- I often feel lonely (-)
- I am in good physical condition (+)
- I think about my health alot (-)
- I often think about my personal safety (-)

The items in the life satisfaction measure were pooled, and a reliability analysis was conducted on the pooled items. The resulting Cronbach Alpha Coefficient was .6592 (.6559 standardized). The reliability of the life satisfaction scale was judged to be adequate, and thus used for further analysis.

Life satisfaction was correlated significantly and moderately with age ($r = -.1309$, $p = .001$, $n = 582$), marital status ($r = .1297$, $p = .001$, $n = 593$), employment status ($r = -.1345$, $p = .001$, $n = 588$), gross annual income ($r = .3013$, $p = .000$, $n = 519$), and education ($r = .2727$, $p = .000$, $n = 576$). More specifically, it was found that: the greater the life satisfaction score of an elderly respondent, the lower the age, the more likely the elderly respondent is married, the more likely the elderly is employed on a regular basis, the greater the gross annual income, and the higher the educational level. These correlations are consistent with those reported in the life satisfaction literature (see Diener 1984 for comprehensive literature review), thus providing support for the "nomological validity" of the life satisfaction measure.

Results and Discussion

The correlation between TV viewership and life satisfaction among the elderly was found to be $-.3396$ ($p = .000$, $n = 582$). This correlation indicates that the greater the TV viewership, the lower the elderly's life satisfaction. This correlation is consistent with our hypothesis and maybe explained through a combination of the cultivation hypothesis, social comparison theory, and culture theory. That is, the elderly who are heavy TV viewers may well cultivate beliefs about the average person being well-off as measured by material possessions (cultivation hypothesis). They may compare themselves to that conception of the average person, resulting in feelings of dissatisfaction (social comparison theory). Since materialism is a central value in the American culture (culture theory), these feelings of dissatisfaction are expected to be global and generalizable to one's life accomplishments and outcomes. Disengagement theory, activity theory, socialization theory, and social breakdown theory were shown to further reinforce the proposed explanation between elderly's TV viewership and their life satisfaction. Furthermore, the finding of this study reinforces the finding of a previous study conducted by Morgan (1984) relating TV viewership with perceived quality of life using a more general population. Morgan found a significant but low correlations between TV viewership and perceived quality of life (in the magnitude of .16 to .20). The present study shown that is relationship is stronger for the elderly consumers than the general population. Richins (1987) attempted to demonstrate a linkage between TV viewership, materialism, and life satisfaction in a study conducted using a general adult sample. The results of the Richins' study were ambiguous at best. The present study suggests that the relationship between TV viewership and life satisfaction may not be generalizable to the general population but may be limited to the elderly. Future research may focus on these differences.

This study is only an exploratory effort in the sense that future research is warranted. We cannot make definitive statements about the relationship between TV usage and life satisfaction among the elderly due to several limitations inherent in the present study. One limitation involves the construct validity of the life

satisfaction scale. One may wonder whether the life satisfaction construct was truly tapped. Although the measure appears to have adequate internal consistency and nomological validity, this may not be definitive enough. Future research may be directed to the development and/or use of a more reliable and valid set of measures. Furthermore, another limitation in this study involves the use of a single indicator measure of TV viewership leaves much room for improvement. Future efforts should concentrate on developing multiple indicators of viewership and then ascertaining their reliability and validity. The Morgan (1984) study, which found a negative but small correlation between TV viewership and perceived quality of life, used a TV viewership measure "On an average day, about how much time, if any, you personally spend watching television?" Since, this study supported a similar hypothesis, one can infer that our TV viewership measure is nomologically valid. Another study limitation is the relatively modest response rate reported. Future effort should directed at generating methods to significantly increase the 22 percent response rate of the present study. For example multiple mailing waves can be employed that might lead to greater and more representative responsiveness in the target population.

Finally, future research might build upon this study by focusing attention of the mediating theoretical variables discussed in this paper. For example, the construct of materialism plays a central role in explaining the relationship between TV viewership and life satisfaction (cf. Richins 1987). Future research could introduce a measure of materialism into the model. Similarly, measures of material possession beliefs about the average person and social comparison can be included as well. Hence, the "causal" mediating relationships between TV viewership and life satisfaction among the elderly can empirically tested. The public policy implications of the TV viewership/life satisfaction relationship as explained in this paper are clear. To enhance life satisfaction among the elderly, public policy officials may take steps toward insuring that TV depictions of the world and the elderly are less negative and more realistic. Public policy officials may create other leisure and entertainment programs for the elderly, thereby decreasing their reliance on TV as a primary source of entertainment among the heavy TV viewers.

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Ideal Age Concepts: An Exploration¹

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Abstract

This paper presents an exploratory study of the meaning of ideal age to adult men and women in three age cohorts: Baby-Boomers (25-39), Pre-Boomers (40-54) and Matures (55-69). Four perceived age measures, a subjective one and three new ideal age scales, elicited the following findings: male and female age perceptions do not differ; age cohort effects influence both subjective and ideal age perception (the older the cohort, the older the perceived ages); personal and cultural definitions of age differ.

Introduction

Ideal age is a facet of the ideal self, an important component of one's self-concept (Sirgy 1982; Rosenberg 1979). The ideal self - that image of the self one aspires to be like - has received some research attention in the context of consumer behavior (e.g. Belch 1978; Onkvisit and Shaw 1987; Sirgy 1982, 1980; Sirgy and Danes 1982). Consumer research has paid surprisingly little attention to the ideal age component of the self: only one set of studies (Barak and Gould 1985; Barak and Stern 1985/86; 1985) has considered ideal age in such a consumer behavior context.

Advertisers of age-sensitive products such as cosmetics and fashion apparel particularly need information about ideal age to understand the youthful aspirations underlying many products' appeal. The lack of published research indicates a common assumption that most Americans, especially women, consider ideal age to be rather young: probably under 30. This assumption is implied by the under-representation of aspirational figures over 30 in advertising: groups of consumer researchers (Caballero and Solomon 1985; England, Kuhn, and Gardner 1981; Harris and Feinberg 1977; Rotfield, Reit, and Wilson 1982) have repeatedly found that advertisers infrequently employ over-30 models in either print or electronic media. For example, England, Kuhn, and Gardner (1981), report that over 77% of magazine ads in the past two decades feature women under 30. This relative lack of mature female promotional figures supports the notion that those who create advertising perceive aspirational referents to be no older than 29.

The chronological aging of the American population, however, indicates that a re-evaluation upward of the concept of ideal age may be in order. By 1980, the American median age was 35 in metropolitan areas such as New York, and was over 30 nation-wide (U.S. Bureau of the Census 1982). Cohort effects of the large and visible population group of the Baby-Boomers, whose oldest members are just now turning 40, appear to be influencing cultural determination of desirable age. Although Americans still worship youth, the concept has become so elastic as a consequence of the new reality of an aging population that reconsideration of the ill-defined youth orientation becomes necessary. Attractive

adult men and women provide evidence that beautiful bodies and faces can extend well beyond 40. Trends such as physical fitness, healthy diets, and preventive medical care contribute to the attractiveness of aging Americans. Role models such as Jane Fonda, Joan Collins, Elizabeth Taylor, and the Reagans, are living proof that those no longer "young-young" are still appealing enough to be considered ideal. The concept of ideal age, therefore, deserves examination in the light of revised chronological reality which has become a powerful social force. While an American cultural bias favoring youthfulness is often assumed operative, no investigation of the precise nature of the relationship between the youth bias and individual perceptions of ideal age has taken place.

This paper presents the first findings of an exploratory investigation of ideal age to shed light on the extent to which the American youth bias influences consumers' age perceptions. The paper will examine age in terms of the following questions:

1. How has ideal age been measured in past research?
2. Does biological sex cause differences in perceptions of ideal age?
3. Do members of different age cohorts - Baby-Boomers (25-39), Pre-Boomers (40-54), and Matures (55-69) - differ in their age perceptions?
4. How do "subjective" age perceptions relate to "real" chronological age?
5. What is the nature of association between self-perceived and ideal age in different age cohorts?

Research Background

In the rather limited past history of ideal age research, focus has been primarily on relationships between ideal, chronological, and subjective age (Barak 1987; Barak and Gould 1985; Barak and Stern 1985, 1985/86; Zola 1962).

The first measure of ideal age was "Age Desired" (Zola 1962, p.66); which relied on a straightforward question: "What age would you most like to be?" The sample consisted of 100 men and 118 women over 65 in New England (mean ages respectively 69.7 and 67.09); the mean "Age Desired" was 45.8 for the men and 45.2 for the women, and mean "Age Felt," a measure of subjective age, was respectively 53.4 and 52.3. While Zola found ideal age positively correlated ($r = .21, p < .01$) with chronological age in both sexes, he did not find such correlations between ideal and subjective ages.

The ideal age concept received little empirical attention until over twenty years later (Barak 1987; Barak and Gould 1985; Barak and Stern 1985/86), when it was measured by the question, "What do you consider to be a person's ideal age? ___ years." The sample

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consisted of 567 adult women surveyed during the early 1980's in the metropolitan New York/New Jersey area. Ideal and chronological age were correlated, repeating the earlier finding. However, unlike the previous finding, ideal and subjective ages were *also* correlated. One interesting finding related to the elasticity of perceived youth: respondents between 30 and 69 had a mean ideal age of 33.6 years and over 66% indicated an age over 30 as ideal (Barak 1987). Another study of this population found that "93.4 percent of consumers over 25 perceived 25+ as an age more desirable than the teens or early twenties" (Barak and Stern 1985/86, p.42). In addition, 68% of Baby-Boomers and 69.9% of women who identified themselves as "young" reported an ideal age over 30. Overall, then, these findings indicate that adult Americans' ideal age, while younger than their chronological age, is typically over thirty.

A problem, however, with these findings is caused by the ambiguous nature of the measure utilized to assess ideal age ("What do you consider to be a person's ideal age?"). The possibility of a disparity between personally truthful and socially desirable response sets seems built into the question's form. The scale is not clear on semantic grounds: the use of "a person" may cause confusion between the respondent's attribution of ideal to him/herself personally and/or any person in general. The question, therefore, does not pinpoint a respondent's feelings about the age s/he might view as subjectively ideal. The intent of the scale had been to be a direct measure of ideal age, instead the question was phrased so awkwardly that it is unclear whether the "person" represents the respondent of simply a generic American "other," or indeed, whether this question can even be interpreted as a projective measure.

New Measures

To overcome interpretation problems and achieve more accurate measurement and understanding of ideal age, three new measures were developed: (1) Desired Age, (2) Personal Ideal Age, and (3) Generic Ideal Age (see Appendix 1).

The first new scale, "Desired Age," was developed as a modification of Barak's (1979) Cognitive Age measure. It relies on a functional model, originally derived from earlier research on age self-concepts (Kastenbaum et al 1972), which develops four dimensions related to functional areas of the self: psychological (feelings), biological (looks), social (actions), and cognitive (interests). This functional model has also been used in sex-role research (Stern, Barak, and Gould 1987) as a basis for a Sexual Identity Scale which elicits sex-role self-concepts in a non-clinical undisguised format.

The cognitive Age scale's modification to the new Desired Age measure adhered to the functional mode's dimensions (see Appendix 1) as shown in figure 1. Desired age, like Cognitive Age, is determined by averaging the responses to the four questions that make up the scale: it also yields a continuous variable, expressed by age in years.

The second new scale is a simple one-component measure, Personal Ideal Age, elicited by the numerical answer to the question: "If you could be any age, what age would you most like to be? The answer must be given as "Age in years." The measure was framed to elicit simply and clearly the respondent's personal perceptions of ideal age: the respondent is addressed as "you" throughout, and the concept of "ideal age" is

Figure 1
New Desired Age Measures' Adherence to the Functional Mode's Dimensions

Functional Dimensions	Cognitive Age	Desired Age
Personality/ Emotional	---> Feel/Age	---> Feel Like/Age
Physical/ Biological	---> Look/Age	---> Look Like/Age
Societal/ Occupational	---> Do/Age	---> Do Like/Age
Cognitive/ Intellectual	---> Interest/Age	---> Interest Like/Age

clearly defined as "the age you would most like to be" to prevent any semantic confusion.

The third new ideal age scale, "Generic Ideal Age," was developed to elicit a respondent's perception of how others view ideal age. The question is phrased. "What age do you think most other people would like to be?"; the answer again must be expressed as "Age in Years." This question is also neither projective nor disguised: the respondent is asked directly what s/he considers to be an age judged ideal by our society, the age "most other people would like to be." It was thought that the question's response would indicate the age perceived as a kind of "generic" measure of socio-cultural ideal age.

Hypotheses

No empirical studies (see Barak and Stern 1986) report an association between biological sex and forms of subjective age, although some (e.g. Ross 1981) suggest that women's age concepts might be younger than men's. Ageist stereotyping, especially virulent and negative towards "older" women (Barak and Stern 1985; Nuessel 1982), leads to the expectation that the "Denial of Aging" process would be stronger for women. Even in the mid-1980's, advertisers and marketers still define "young" as well under-30 by featuring models in their teen and twenties. Even when positive "old-age" models are used, they tend to be male. Based on the premise that women are socially conditioned to view themselves as "younger" than comparably aged men, the following hypothesis was made:

H1: Women's subjective and ideal ages are "younger" than those of men, in all chronological age-cohorts.

Since chronological age is positively correlated with subjective and ideal age (Zola 1962; Barak 1987; Barak and Gould 1985), the implication is that the older one's real age, the older one's age-concept should be. To test this phenomenon, which has received little systematic study, the following hypothesis was made.

H2: The older one's chronological age cohort, the older one's subjective and ideal ages.

The difference and/or similarity between subjective age and forms of ideal age has seen very little study; the

few findings are inconclusive and contradictory. Zola (1962) did not find subjective and ideal age to be correlated, but Barak et al did find ideal age positively correlated with subjective age as measured by Cognitive and Identity Age (Barak 1987; Barak and Gould 1985; Barak and Stern 1985/86). Other contradictions concern ideal and subjective mean age scores. Zola (1962) reported men's and women's mean ideal age to be eight years "younger" than their subjective age. Barak and Gould (1985) found ideal age scores in a 30-69 population to be younger than those of subjective age. When only thirty year olds were considered, mean ideal age score (31.64) were older than those of subjective age (29.88), but this situation reversed itself among consumers 40+, where the ideal age mean score (35.29) was younger than subjective age (42.21). Since the findings are ambiguous, this null-hypothesis was postulated:

H₃: Subjective and ideal ages will *not* differ from each other in chronological age cohorts.

Method

Instrument & Sample

An 11-page self-report questionnaire was completed by 760 men and women in the greater New York/New Jersey Metropolitan area in 1985/86. While the full instrument incorporates many age-related variables, the ones considered here are limited to:

Chronological Age, Cognitive Age, and the three new ideal age scales: Desired, Personal Ideal and Generic Ideal Age. The data was collected from a convenience sample of respondents aged 20 to 80 at their homes and places of work by marketing students. An age and sex quota sampling procedure was followed to select a representative sample of men and women. The study reported on here is restricted to respondents between 25 and 69 (mean = 47.93) who answered all subjective and ideal age questions. These limitations reduced the total sample to 578 respondents (299 men & 279 women). Table 1 provides a demographic profile of the study sample. Reliability assessment helped establish internal stability: both the multi-item Cognitive and Desired Age scales possessed an alpha coefficient greater than .92.

Analyses & Results

The first hypothesis was tested with T-Tests conducted between mean male and female age scores (respondents' mean age scores for the measures of Chronological, Cognitive, Desired, Personal Ideal and Generic Ideal Age in both sexes as well as the differing cohorts are provided in Table 2). For the total sample as well as the various age cohorts H₁ was not supported: men and women, rather surprisingly (negative female age stereotypes are more frequent; see Nuessel 1981), *do not differ* in terms of ideal age perceptions.

The second hypothesis was tested (1) with Multivariate Analysis of Variance (employing the

Table 1
Sample Composition: Demographics

	Cohorts			
	25-69 (N = 578) 100.0%	25-39 (N = 169) 100.0%	40-54 (N = 187) 100.0%	55-69 (N = 222) 100.0%
EDUCATION:				
High School or less	32.5%	9.5%	33.2%	49.1%
Attended/Compl College	41.2	47.9	42.2	35.1
Attended/Compl Grad School	26.1	42.6	24.6	14.9
No Response	.3			.9
EMPLOYMENT OUTSIDE HOME:				
Full-Time	66.6%	68.5%	81.8%	52.2%
Part-Time (<30 hrs)	12.1	20.1	7.0	10.4
Retired	7.8	.0	.5	19.8
Not Employed	12.1	10.7	8.6	16.2
No Response	1.4	.0	2.1	1.4
MARITAL STATUS:				
Married	67.3%	55.0%	71.1%	73.4%
Non-Married	32.4	44.4	28.3	26.6
No Response	.3	.6	.5	
ETHNICITY:				
White	78.7%	80.5%	73.8%	81.5%
Non-White	19.2	17.2	22.5	18.0
No Response	2.1	2.4	3.7	.5

repeated measures design of MANOVA in SPSS/PC+) of age means across the three age cohorts, and (2) with T-Tests between mean Cognitive, Desired, Personal Ideal and Generic Ideal Age scores in one cohort vis a vis those found in the older cohort: Baby-Boomers vs. Pre-Boomers, Baby Boomers vs. Matures, and Pre-Boomers vs Matures (see Table 2 for age means utilized in the MANOVA and T-test analyses). The second hypothesis can be accepted: the "older" one's age-cohort, the "older" one's subjective and ideal ages will be. The MANOVA tests of Between-Subjects Effects using Unique sums of squares clearly established the significant difference between each cohort's age variables. The T-tests further helped establish the nature of these differences. There is only one exception: the mean Generic Ideal Age scores alone did not differ between the Baby-Boomers (24.99) and the Pre-Boomers (25.72). Furthermore, response patterns of male and female subjects in terms of age-decades, see Table 3, were similar: the older the chronological age cohort, the greater the proportion of respondents indicating a personal age over 30.

The third hypotheses was assessed across the total sample as well as within each of the cohorts: first through the multivariate MANOVA procedure (Within Subject Effect of age means), second with T-Tests of the mean scores of the five age scales in relation to each other, and next with Pearson correlations between the age dimensions (see Table 4).

Based on these three analyses' results, it is clear that this hypotheses has to be rejected: the various age concept measures clearly differ from each other. In only one paired T-Test (T value = 1.1; d.f. = 168; p = .275) did two age measures not differ significantly: Baby-Boomers' mean Personal Ideal Age (25.48) did not differ from the cohort's mean Generic Ideal Age (24.99). All

age dimensions were correlated except Chronological and Personal Ideal Age in the Pre-Boomer generation. The high correlations occurred in the total sample: The highest was between Chronological and Cognitive Age ($r = .85$), and the second highest between Cognitive and Desired Age ($r = .65$). As Table 4 shows, these correlations decrease in strength when Pearson matrices in the three sub-cohorts are considered.

Discussion and Implications

Although this exploratory study relied on a North-Eastern convenience sample (thus limiting generalizations), it provides several new insights into American age-role perceptions. The lack of difference between male and female subjective age self-concepts has marketing research (e.g. determination of the product mix offered by manufacturers and retailers) as well as advertising implications. First, pooled-sex samples are probably appropriate for age data analysis. But more interestingly, it may be possible to generalize from the predominantly female samples in prior age research, especially if replications find that the lack of sex differences holds true. As indicated, it is not as yet clear how much these findings can be generalized for the population as a whole. Nonetheless, the only national probability study known to this paper's authors in which both male and female respondents indicated their Cognitive Age (conducted by Needham and Harper; see Ross 1982) did not clearly establish if such age perceptions differ. On the other hand, all other studies (utilizing different subjective age measures) support the present findings concerning a lack of gender based differences (see Barak and Stern 1986).

**TABLE 2
AGE MEANS & STANDARD DEVIATIONS:
TOTAL BY SEX AND AGE-COHORTS**

	TOTAL COHORT 25-69 (N = 578)		BABY BOOMERS 25-39 (N = 169)		PRE-BOOMERS 40-54 (N = 187)		MATURE 55-69 (N = 222)	
	Mean	St.D.	Mean	St.D.	Mean	St.D.	Mean	St.D.
TOTAL SAMPLE:								
Chronological Age	47.93	12.66	31.76	3.79	46.83	4.50	61.17	3.73
Cognitive Age	41.09	10.82	29.38	4.73	40.28	7.00	50.69	7.04
Desired Age	34.34	9.05	27.75	4.46	33.84	7.56	39.77	9.35
Personal Ideal Age	30.26	10.00	25.48	5.78	29.15	8.56	34.82	11.60
Generic Ideal Age	26.44	7.72	24.99	5.61	25.72	8.08	28.14	8.45
WOMEN:								
	(N = 279)		(N = 80)		(N = 94)		(N = 105)	
	Mean	St.D.	Mean	St.D.	Mean	St.D.	Mean	St.D.
Chronological Age	48.05	12.47	32.02	3.53	46.90	4.56	61.28	3.48
Cognitive Age	41.12	11.15	29.16	4.53	40.66	7.80	50.64	7.77
Desired Age	34.29	8.93	27.63	4.52	34.71	8.47	39.00	8.77
Personal Ideal Age	30.07	10.13	26.00	5.16	28.18	8.59	34.87	12.19
Generic Ideal Age	25.97	7.08	24.93	6.16	24.91	6.02	27.72	8.24
MEN:								
	(N = 299)		(N = 89)		(N = 93)		(N = 117)	
	Mean	St.D.	Mean	St.D.	Mean	St.D.	Mean	St.D.
Chronological Age	47.82	12.87	31.53	4.01	46.75	4.46	61.07	3.95
Cognitive Age	41.06	10.53	29.59	4.92	39.89	6.10	50.73	6.35
Desired Age	34.38	9.17	27.87	4.44	32.96	6.45	40.47	9.83
Personal Ideal Age	30.43	9.89	25.01	6.28	30.13	8.47	34.79	11.09
Generic Ideal Age	26.87	8.25	25.04	5.11	26.53	9.70	28.52	8.66

TABLE 3
AGE-DECADE PATTERNS BY COHORT

	Pre-teens (%)	10's (%)	20's (%)	30's (%)	40's (%)	50's (%)	60's (%)	70's (%)	90's (%)
TOTAL SAMPLE (N = 578)									
Chronological Age			7.6	21.6	21.3	23.5	26.0		
Cognitive Age		.3	14.9	30.1	28.7	22.0	3.8	.2	
Desired Age		1.2	30.4	42.9	18.3	6.1	.9	.2	
Personal Ideal Age	.7	7.8	40.0	32.0	13.1	4.7	1.7		
Generic Ideal Age	.3	9.3	55.7	27.5	6.2	.3	.3		.2
BABY-BOOMERS (N = 169)									
Chronological Age			26.0	74.0					
Cognitive Age		.6	47.9	49.1	2.4				
Desired Age		1.3	61.5	36.1	.6				
Personal Ideal Age	1.2	10.1	60.9	27.2	.6				
Generic Ideal Age	.6	11.2	62.1	24.9	1.2				
PRE-BOOMERS (N = 187)									
Chronological Age					65.8	34.2			
Cognitive Age		.5	2.7	43.3	44.4	8.6	.5		
Desired Age		1.1	24.1	56.7	14.4	3.2		.5	
Personal Ideal Age	1.1	8.0	39.0	35.8	13.9	2.1			
Generic Ideal Age	.5	12.3	54.5	28.3	3.7				.5
MATURES (N = 222)									
Chronological Age						32.4	67.6		
Cognitive Age				4.5	35.6	50.0	9.5	.5	
Desired Age		.9	12.2	36.5	35.1	13.1	2.3		
Personal Ideal Age		5.9	24.8	32.4	22.1	10.4	4.5		
Generic Ideal Age		5.4	51.8	28.8	12.2	.9	.9		

Currently, marketers are more aware of the 40+ population's economic potential and this in turn has led to an increased interest in aging and the specifics of marketing to aging populations (e.g. see Barak and Stern 1985/86; *Business Week* 1986). The present findings might also be of particular use to advertisers interested in determining the appropriate age for models that appear in advertisements aimed at older consumers (Pre-Boomers and Matures). If both men and women view their actual and ideal age selves in similar terms, they can be matched more appropriately as spokespersons. Further research is necessary to see whether other assumptions concerning male/female valuation as spokespersons still hold true.

The use of spokespersons congruent with the target audience's age image is perhaps the most important advertising and public policy implication of the redefined concepts of subjective and ideal age. While the youth bias still exists - the respondent's mean perceptual age scores were younger than their Chronological Age in all populations considered - personal age concepts seem to move upwards in tandem in each succeeding 15 year cohort (see Table 3). Marketers need to show sensitivity to consumer preferences for spokespersons and advertising models reflective of their own personal age ideals. If such spokespersons and/or models are too far removed in age from the target audience, unrealistic aspirations may alienate the consumer. Age congruence with a target audience's expectations seem especially important for age related product offerings (e.g. fashions and cosmetics) or services (e.g. health care, financial management, and leisure-time offerings). In general, a youthful bias is desirable, since energetic and stimulating spokespersons

and models are most attractive, but the definition of "attractive" has as much to do with the target segment's age as that of the models featured.

The findings of an increase in age-role self-concepts as the respondent's chronological age increases might be indicative of a general age schema. While causal relations between objective and subjective forms of age would be reflective of age schema, if any, they are not as yet known. It is feasible that there may, in fact, be different age schemas within each age cohort, as well as a generally youth-biased age schema for all. We feel therefore that the concept and nature of age schemas certainly merits further investigation.

The finding that individuals consistently judge ideal age for others as younger than their personal ideal reinforces the American core cultural concept of youthfulness, yet raises questions as to its relevance in one's own life. While personal ideal age appears to be a function of where we are in time, a general context of admiration for youth also holds true. Americans have achieved a comfortable congruence between the personally subjective objective facts of their chronological existence by defining their own ideal age in relation to their birth certificates, and permitting the generic ideal for others to coexist, yet differ from, the personal. Overall, the study therefore established that consumers individually do not desire as much youth as they assume "others" do. The relationship between these two age ideals, however, is worth further study since it is not, as yet, known whether we merely pay lip service to a mythic Fountain of Youth or apply it in some still unknown way to our individual frame of reference.

TABLE 4
AGE CORRELATION MATRICES*

	Chrono Age (r)	Cognit Age (r)	Desired Age (r)	Personal Ideal Age (r)	Generic Ideal Age (r)
TOTAL SAMPLE (N = 578)					
Chronological Age	1.00	.85	.58	.41	.20
Cognitive Age		1.00	.65	.46	.25
Desired Age			1.00	.62	.37
Personal Ideal Age				1.00	.50
Generic Ideal Age					1.00
BABY-BOOMERS (N = 169)					
Chronological Age	1.00	.47	.31	.30	.15b
Cognitive Age		1.00	.61	.32	.15b
Desired Age			1.00	.44	.31
Personal Ideal Age				1.00	.48
Generic Ideal Age					1.00
PRE-BOOMERS (N = 187)					
Chronological Age	1.00	.58	.28	.14b	.09a
Cognitive Age		1.00	.54	.25	.13b
Desired Age			1.00	.53	.25
Personal Ideal Age				1.00	.39
Generic Ideal Age					1.00
MATURES (N = 222)					
Chronological Age	1.00	.35	.18c	.14b	.17c
Cognitive Age		1.00	.33	.30	.26
Desired Age			1.00	.55	.40
Personal Ideal Age				1.00	.54
Generic Ideal Age					1.00

*Unless otherwise indicated, correlations are significant with $p < .001$.

a $p < .1$

b $p < .05$

c $p < .01$

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Appendix 1

Measurement of Ideal Age Concepts

I. Desired Age is a composite measure. It is computed by averaging the midpoint of the measure's four age dimensions
 $(\text{Feel Like}/\text{Age} + \text{Look Like}/\text{Age} + \text{Do Like}/\text{Age} + \text{Interest Like}/\text{Age}) = 4$

The scale employed to measure Desired Age and its four dimensions is the following:
 Please specify which of these age decades you would IDEALLY LIKE TO belong to:

	teens	20's	30's	40's	50's	60's	70's	80's
1. I would like to FEEL as though I were.. in my.....	_____	_____	_____	_____	_____	_____	_____	_____
2. I would like to LOOK as though I were.. in my.....	_____	_____	_____	_____	_____	_____	_____	_____
3. I would like to DO things as though I were in my.....	_____	_____	_____	_____	_____	_____	_____	_____
4. I would like my INTERESTS to be those of someone in his/her.....	_____	_____	_____	_____	_____	_____	_____	_____

II. PERSONAL IDEAL AGE. This age factor was measured through the question:
 If you could be any age, what age would you most like to be? Age in years _____

III. GENERIC IDEAL AGE: This age factor was measured through the question:
 What age do you think most other people would like to be? Age in years _____

An Analysis of the Content and Organization of Children's Knowledge Structures¹

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Abstract

In this paper, we explore the information processing capabilities of first- and fourth-grade children in an attempt to provide a better understanding of both the content and organization of information in children's memories. An empirical study of first- and fourth-graders was designed to directly measure their knowledge about nutrition and breakfast cereals. Several differences, as well as many similarities, were found between the information processing capabilities of the two age groups. The results of the study suggest that much of the previous literature has tended to underestimate the abilities of younger children to process consumer information.

Introduction

A substantial number of studies have examined how children process information. Much of this research suggests that children's consumer information processing ability in general and their ability to process consumer information contained in advertisements has been underestimated. In fact, it seems that children, even very young children, can effectively process much of the consumer information presented to them.

However, little is known about the actual content and organization of knowledge in children's memories. A better understanding of the content of children's knowledge would provide the necessary base for interpreting the types of information acquired by young consumers at various age levels and the subsequent behavioral effects of that knowledge, such as in the processing and recall of advertisements.

In order to process consumer information, children must have a framework of relevant knowledge in memory. This preexisting knowledge drives the comprehension processes necessary for interpreting new stimuli, assigning meaning to them, and integrating this new knowledge in memory for future use (Olson 1980). Thus, the more sophisticated and extensive this stored knowledge, the more effectively information can be processed.

The present study attempts to directly measure children's knowledge structures about nutrition and breakfast cereals. We examine age-related differences in several qualitative and quantitative characteristics of the children's knowledge structures.

The view of the child as a relatively sophisticated consumer and information processor has been slow to gain widespread acceptance. In part, this is due to an almost exclusive reliance on a single theoretical framework for the interpretation of information processing studies -- namely, Piaget's theory of cognitive development. Piaget's theory emphasizes the explanatory power of the stage construct, whereby the child's cognitive processes are presumed to mature through several stages of development. These stages

roughly correspond to chronological age: sensorimotor (birth to two years), preoperational (two to seven years), concrete operational (seven to eleven years), and formal operational (eleven through adulthood).

Piaget's stages of cognitive development have generated a great deal of research. Increasingly, however, researchers have moved away from strict adherence to this framework by incorporating other aspects such as the role of experience and the cognitive representation of information in memory. Such shifts are evident in the work of several researchers (e.g., Calder, Robertson, and Rossiter 1975; Macklin 1983; Roedder 1981; Ward 1980; Brown 1979; Nelson 1986). Furthermore, the assumption that young children, especially under the age of eight, are not capable of understanding and evaluating consumer information is not based on actual measures of the knowledge stored in their memories. In fact, little is known about the actual content and organization of information in children's memories. Few attempts have been made at direct measurement (for exceptions, see Ceci, Lea, and Howe 1980; Kanwar, Olson, and Sims 1980; Markus 1977; Roedder-John 1985). As Roedder-John and Whitney (1986) have noted, few attempts have been made to describe and examine the general patterns of qualitative and quantitative changes in children's knowledge as it develops over time as predicted by Piaget's theory.

Information Processing Theoretical Framework

Knowledge has been conceptualized as structures or frameworks of concepts in memory. As the child develops and acquires new knowledge, changes occur in these structures (Hayes-Roth 1977). These changes may involve accretion (the accumulation of facts), tuning (the gradual modification of old structures to reflect new information) and restructuring (devising new structures to represent new and old information). As an individual's knowledge structures become more complex and better organized, he/she may become aware of stimuli not previously obvious (Lange 1978; Rumelhart and Norman 1978). In addition, the structure may take on the quality of "richness" through a complex web of interrelationships between concepts (Kintsch 1974). For example, a child may not have a relevant, adequate knowledge structure available for interpreting a new stimulus. The stimulus would then be understood in terms of an available, possibly disorganized structure (Calder, Robertson, and Rossiter 1975). Over time and repeated activations, however, ill-structured information tends to become organized as a result of new insight and understanding through Rumelhart and Norman's (1978) "click of comprehension".

We believe that the study of children's knowledge structures demands a theoretical framework which deals not only with differences between age groups attributable to cognitive development, but also acknowledges differences within age groups. Such differences would include varying knowledge structures resulting from differing consumer experiences. For example, Ward (1980) found that young children who had frequent consumer-related interactions with their parents displayed

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consumer skills beyond what would normally be expected based on their cognitive stage. Young children also seem to be able to overcome processing deficits through various processing strategies such as reducing the effort required to process a given amount of information (Roedder-John and Whitney 1986).

A viable theoretical framework should include visual and verbal representations of information in memory, since both forms are considered important aspects of memory. Rossiter (1976), for example, found evidence of a rich visual consumer base in children's memory. To incorporate these factors, a research framework was developed using a levels-of-processing perspective with a basic information processing model. In the information processing model a child must first attend to an environmental stimulus such as a product package. Attention is a prerequisite to engaging the subsequent stages of information processing, including comprehension (encoding), representation, storage, retrieval, and information integration for subsequent decision making. Processing can terminate at any point. Furthermore, the new information would be stored in memory as a modification of existing knowledge structures or as new knowledge structures. This framework is consistent with current conceptualizations of the organization of information in memory (Hayes-Roth 1977; Lange 1978; Markus 1977; Nelson 1986). Ward (1980) described the information processing framework as a promising approach for children's consumer research because it focuses on complex cognitive skills, such as the selection and use of information relevant to purchasing decisions.

Augmenting the basic information processing framework is the levels-of-processing perspective. Originally introduced by Craik and Lockhart (1972) as a reaction to static information processing models, the key idea relevant to this study is that memory content is a function of the encoding operations that create it. The encoding process is "driven" by preexisting knowledge structures that are activated by a stimulus (Olson 1980). Encoding processes occur at various levels ranging from structural (e.g., simple matching or pattern recognition) to semantic (e.g., making more abstract associations or inferences about the external stimulus). The resulting representation of an event is strongly determined by expectations, prior schemas (cognitive organizing frameworks), and other cognitive and affective states (Nelson 1986). In sum, the levels-of-processing theory is suitable for examining cognitive changes in children's processing as a function of their stage of development.

Piagetian theory predicts differences in the total number of concepts in the knowledge structures of children at different age levels. Information processing research suggests that knowledge structures may also vary qualitatively between age groups. These differences are likely to occur in terms of the relative mix of the structural and semantic concepts they contain. To provide a relatively direct measure of these characteristics of knowledge structures, we used a modified repertory grid procedure and a set of directed probes to which children responded freely in their own words. Our objective was to determine the extent to which the knowledge structures of first- and fourth-grade children differed.

Methodology

Subjects and Stimuli

Forty children (20 boys and 20 girls) participated in the study. Subjects were recruited from the first and fourth grades of two elementary schools in central Pennsylvania. Half of the Ss were six, and half were nine years old. These ages fit into the two Piagetian stages frequently referenced in the literature -- ages two to seven (or preoperational) and ages seven to eleven (or concrete operational). The interviews were conducted in either an unused classroom (n=26) or in the living room of a private residence (n=14). Full-size, unopened boxes of dry, breakfast cereals were selected as the stimuli for this study. Cereals have received attention in past public policy decision making and also rank relatively high among products requested by children (Ward, Wackman, and Wartella 1977). The nine cereal brands used in this research were selected from a range of nutritional quality ratings obtained from *Consumer Reports* and from labeling information and promotion programs of cereal brands.

Measurement Procedures

Since standard questionnaire procedures for measuring knowledge (e.g., multiple choice tests) seemed unable to provide the desired detail about the contents of knowledge structures, free response measures were used. Although verbal reports probably provide incomplete and inaccurate representations of children's actual knowledge, they have provided useful indications of the structure and content of knowledge (Nelson 1986). One approach to measuring children's nutrition-related knowledge structures was adapted from the repertory grid procedure introduced by Kelly (1955) and used by Olson (1980; Olson and Sims 1980) in cognitive research in consumer behavior. As recommended by Wells (1965), we used product packages as probes to activate relevant knowledge concepts from children's memories. After all test items and instructions were pretested in pilot sessions with children in both grades, we used the cereal packages and the imagery instructions, "Close your eyes and tell me what you see when you think of cereal," as probe cues in the repertory grid. This method was found to be effective in working with young subjects since it allowed them to respond in their own words and to elaborate their responses if they desired to do so. We treated the concepts elicited in the repertory grid procedure as direct indicants of children's preexisting knowledge.

Individual interviews were conducted with each child by a female interviewer. The subjects' verbal responses to questions and probe cues were tape recorded. The children did not seem to be apprehensive of, or intimidated, by the recording equipment. The repertory grid task was introduced as follows:

"I'd like you to pretend that you are in the cereal aisle of a grocery store and are trying to decide which cereal to buy. I'm going to show you three cereals at a time, and I'd like you to tell me how you think the cereals are alike or different from each other. I'm interested in what you already know about the cereals and what you can tell me about them just by looking at the package."

Three sets (triads) of three cereal brands were presented. For each triad, the child was first asked to think of ways that any one cereal differed from the other

two. Throughout the task, interest in the cereal itself (i.e., the contents) was stressed. When no further distinctions were offered, the child was asked to describe ways in which the three cereals were alike. When no further comments could be elicited, the next triad was shown.

Another measure of nutrition knowledge was derived from a set of questions dealing with children's knowledge about specific nutrition concepts including calories, vitamins, and the perceived nutritional quality of cereal. The subjects' responses to these broad questions were analyzed in terms of whether they gave an answer and, if so, how accurate their responses were. We also collected other information from the children's parents (prior to interviewing the children) that might effect the children's knowledge about dry breakfast cereals. These measures, which included television viewing, familiarity with and use of cereal, and demographic data, were taken to assess the impact of various experiences besides age on children's knowledge structures.

Results

Quantitative Differences in Knowledge Structures

Cognitive structures vary in dimensionality, defined as the number of concepts in the knowledge structure of interest. Dimensionality was measured by counting the total number of responses elicited for the breakfast cereals across all three repertory grid triads. We observed significantly fewer concepts in the repertory grid responses for Grade 1 compared to Grade 4 (means equal 15.3 vs. 22.9, respectively, $p=.05$). As expected from Piaget's cognitive development theory, fourth-grade children provided more total responses (an average of 7.6 or 49.7 percent more) than the younger group. While the older children seem to have more extensive knowledge about breakfast cereals, it is not known whether this difference is due to their more mature cognitive development or to their exposure to more consumer information over a longer period of time.

Despite the greater dimensionality of fourth graders compared to first graders, there was a significant overlap in the number of responses elicited for each of the three triads. Thus, the superior dimensionality of the older children was not universal. Not all fourth-grade children had more concepts than all first graders, nor were all first-grade children always in the lowest group. Rather, in each grade level we found some children with relatively extensive knowledge structures and others with low amounts of knowledge.

Qualitative Differences in Knowledge Structure Content

The abstractness of knowledge structures is reflected by the relative amount of sensory level (concrete, structural, episodic) versus semantic (general, abstract) knowledge they contain. All of the responses to the repertory grid task were coded as either structural or semantic. Some of the children's responses were structural and sensory including descriptions of the cereal boxes, mention of ingredients displayed on the package, specific words printed on the package, and premium information. In contrast, semantic responses reflected judgments or inferences, personal feelings, or references to parental advice. A greater proportion of the latter types of concepts implies more abstract, semantic knowledge which affects information processing.

As compared to the first graders, the fourth-grade children provided more semantic (72.4 percent more) and structural (33.9 percent more) responses. The differences between the two groups of Ss for the semantic responses were marginally significant (means equal 6.15 for Grade 1 versus 10.40 for Grade 4, $p=.06$). These results imply that older children have a greater amount of relevant information in memory. As children add new information to their knowledge structures, the amount of semantic knowledge increased from 32.0 to 46.0 percent of the total ($p=.07$), while structural knowledge decreases from 68.0 to 54.0 percent ($p=.03$). Their greater semantic knowledge makes a richer knowledge base for the older children.

Nutrition-Related Knowledge

Responses elicited during the repertory grid task were further coded as either nutritional or not nutritional. Most (60 percent) nutrition-related responses tended to be semantic. Overall, fourth-grade children provided twice as many nutrition-related responses as did the first graders (means equal 7.75 and 3.85, respectively, $p<.02$). In terms of the structural versus semantic distinction, fourth graders provided three times as many structural nutrition responses as did the first graders. There was a less dramatic increase in the number of semantic-related concepts (45.9 percent more) from the first to fourth grade group. Thus, the older children appear to have a more extensive base of nutrition knowledge at their disposal. First-grade children provided mainly semantic responses thus suggesting that even young children may be capable of processing nutrition information for consumer products at a deeper, more meaningful level than has been recognized in the past.

Other Measures of Nutritional Knowledge

Finally, we used three questions to measure children's general nutrition knowledge: "What is a calorie?", "What is a vitamin?", and "Is cereal nutritious?". Responses were analyzed in terms of whether or not a response was offered and, if so, whether the response could be considered reasonably accurate. A similar categorization scheme was employed by Jacoby, Chestnut, and Silberman (1977). Nearly all children at both grade levels agreed that all or some cereals are nutritious. Differences by grade level were found in responses related to calories and vitamins. Fourth-grade children provided reasonably accurate responses (with 75 and 100 percent accuracy for the calorie and vitamin questions, respectively). In contrast, first-grade children appeared to have a poorer understanding of calories and vitamins, although their understanding of vitamins was better than for calories (with only 20 and 60 percent accuracy). These results suggest that fourth-graders are probably able to make more accurate inferences about these concepts based upon their more extensive general nutritional knowledge.

Basis for Knowledge Differences

A close analysis of the data suggest that the age differences in knowledge concepts in the repertory grid procedure were due largely to the low mean number of total responses provided by the first-grade girls, where the cell mean was 11.3. The mean responses for the other subgroups were 19.3, 22.4, and 23.3 for the Grade 1 boys, the Grade 4 girls, and the Grade 4 boys, respectively. These differences seem to be a function of two experience-related factors that were reported in the

background questionnaire completed by the children's parents. The first-grade girls had significantly fewer product-related experiences than the other subgroups in terms of the number of brands usually on hand and the number of mornings per week that cereal is eaten. The means for these variables for the Grade 1 girls were 2.8 and 2.4, respectively, as compared to 4.3 and 4.4 for the Grade 1 boys, 4.5 and 3.8 for the Grade 4 girls, and 4.0 and 4.1 for the Grade 4 boys. This finding suggests that the knowledge structure content reflects differences in product experiences rather than in age-related, developmental variables alone.

Discussion and Conclusion

The present study investigated the content of children's knowledge structures for dry breakfast cereal and related nutrition concepts. The knowledge structure approach based on levels-of-processing and information processing theory that we used did not impose simple age-related differences on children's information processing abilities. As expected, a clear distinction between age levels/grades based on dimensionality alone (as measured by the number of concepts in memory) did not emerge. Although the older group did have a greater number of concepts in memory, we observed a considerable overlap in the number of responses provided by the first- and fourth-grade children.

We found even fewer differences between age groups/grades in the abstractness of their knowledge structures. The older children seemed to have more semantic as well as more structural concepts in memory. However, it was interesting to note that as the overall amount of knowledge in memory increased with age (and experience), the percentage of semantic knowledge increased with a corresponding decrease in the percentage of structural-level knowledge. Perhaps this result was due to the older children's conceptual ability to create semantic relationships based on the available structural knowledge in memory.

In the special case of nutrition knowledge, we found that even six-year old children possessed some knowledge about nutrition-related concepts. Although their knowledge was not as extensive as that of the nine-year olds, the younger children's nutrition-related responses did comprise 25.2 percent of the total product distinctions they elicited. However, the older children provided twice as many nutrition-related responses as the younger group.

In terms of levels-of-processing theory, these results suggest that even young children possess some semantic content in memory and, therefore, have some ability to process information at a semantic level. Also, even young children possess semantic nutritional knowledge structures and can employ their nutrition knowledge when faced with consumer information processing tasks. These results suggest that the extent of children's knowledge structures and their potential for processing consumer information may have been underestimated in past research. Moreover, these results suggest that actual product-related experience may have an equally important impact on knowledge structures as age-related developmental influences.

While these results provide a useful perspective on the ability of children to process consumer information, it is important to consider the possible limitations of the generalizability of this study's findings due to the small sample size and nonrepresentative sampling of our subjects. Nevertheless, the triad elicitation procedure

used in the research appears promising for use in the study of children's memory content. Additional research needs to be devised to replicate and further explore these possibilities.

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Compliant, Aggressive and Detached Types Differ in Generalized Purchasing Involvement

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Abstract

Cohen's (1967) method of determining compliant, aggressive and detached personality types is modified and employed in exploring the relationship between personality types and generalized purchasing involvement. The hypothesis that the detached personality type will be less involved in purchasing than compliant or aggressive personality types is tested and supported. Theoretical implications are discussed.

Introduction

The purpose of this study is to determine how compliant, aggressive and detached personality types (Horney 1937, 1939, 1945, 1950; Cohen 1966, 1967) differ with respect to generalized purchasing involvement (Kassarjian 1981; Slama and Tashchian 1985). Generalized purchasing involvement is a concept that refers to individual differences in involvement with purchasing activities that are not restricted to specific purchase situations. Kassarjian (1981) states that it is undeniable that there are differences between individuals which, regardless of the product or situation, make some people more interested, concerned or involved in the consumer decision process. Kassarjian proposes that consumers' involvement with purchasing influences their purchase behavior and that different consumer types (i.e. market segments) can be identified on the basis of their involvement (Table 1). Notice that in Table 1, Kassarjian combines the product and situation effects such that he can concentrate on differences between consumers with respect to their involvement in purchasing. Three types of consumers are proposed in Table 1. These are the high involvement consumer (for example, an upper middle class housewife) the low involvement "detached type" (someone who is detached from purchasing because of career or other more personally relevant interests) and the low involvement "know nothing" consumer (apathetic in all respects).

Given these descriptions of how consumer characteristics may related to purchasing involvement, it seems likely that purchasing involvement would be low for people exhibiting a detached (from other people) personality orientation. Although exceptions could be found, it is likely that the low-involvement "detached type" who is detached from purchasing because of career or other interests may (for the same reason) be detached from people. Horney (1945) suggested that people who are frustrated in their compliant or aggressive tendencies, or both, may well adopt a detached personality. If an individual is uncertain as to how to interact effectively with others and has received negative reinforcement from early social interaction, including contacts with salespeople and other potential purchase influencers, this orientation might be appropriate, and the detachment from people could grow into a detachment from purchasing. The low involvement "know nothing" is described as apathetic about most things and is also likely to be detached from people.

Table 1
 Kassarjian's Consumer Trait Theory

Consumer Type	Situational Effect of Product Involvement	
	High	Low
High Involvement	Much of consumer knowledge as it exists today.	Typical low involvement
Low involvement	Minimal interest but narrowly and intensely focused	Oblivious to product issues
Low Involvement ("Know nothing")	Choice determined by availability, packaging, affordability.	Don't know Don't care. No opinion

Source: Harold H. Kassarjian, "Low Involvement -- A Second Look," in Kent B. Monroe, ed., *Advances in Consumer Research*, 8, 1981, 31-34.

A scale has been developed for the measurement of generalized purchasing involvement (Slama and Tashchian 1985). Work with the scale has shown that the scores obtained significantly relate to shopping effort even after taking into account product and situation effects (Slama and Tashchian 1983). The scores also related to demographics such that an involved consumer could be described as a well educated middle income woman with children at home. Recently it has been suggested that purchasing involvement may be a characteristic of generalized communicators of marketplace information called "market mavens" (Feick and Price 1987). Given their desire to communicate with others and their high purchasing involvement, market mavens are unlikely to be detached personality types as described by Horney and Cohen. One research study found that self-identified opinion leaders scored low on detachment and high on compliance (Williams, Mager and Rogers 1986).

The CAD personality measurement instrument was introduced in the late 1960's as a tool specifically designed to investigate personality in a consumer behavior context (Cohen 1966, 1967). The CAD is based on the idea that people can be categorized according to their predominant modes of response to other persons. Three personality types are suggested in the paradigm: (1) Compliant--those who move toward people; (2) Aggressive--those who move against people; and (3) Detached--those who move away from others. The three personality types are described in more detail in Table 2.

Table 2
Components of the CAD

COMPLIANT

- Attributes: Good, sympathetic, loving, unselfish, humble, oversensitive to others' needs, overgrateful, overconsiderate, apologetic, self critical, seeks problem solutions in others, manipulates others through weakness, dependance, reliance on others.
- Desires: To be loved, wanted, appreciated, needed, helped, guided, protected, to be part of the activities of others.
- Dislikes: Egotism, aggression, conflict, assertiveness, power seeking.

AGGRESSIVE

- Attributes: Strength, power, unemotional realism, manipulates others by gaining power over them, cynical, exhibitionistic.
- Desires: To excel, achieve success, prestige, admiration, to be a superior strategist, to control emotions and fears.

DETACHED

- Attributes: Nonconforming, emotionally distant from others, distrustful.
- Values: Freedom from obligations, being unique, independence, reasoning, self sufficiency, intelligence.
- Dislikes: Being influenced by others, sharing experiences, conformity, showing feelings.

Based on: Joel Cohen, "An Interpersonal Orientation to the Study of Consumer Behavior," *Journal of Marketing Research*, 4, (August 1967), 270-278.

In the current research it is hypothesized that detached personality types will score lower on purchasing involvement than either compliant or aggressive personality types. Cohen's CAD scale is used for operationalizing personality and Slama and Tashchian's purchasing involvement scale is employed to measure involvement.

Methods and Results

A questionnaire containing the Slama and Tashchian (1985) purchasing involvement scale and Cohen's (1967) CAD scale was administered to undergraduate marketing students at a major western university. Sample items from both scales are shown in Table 3. Two hundred eighty-four respondents, 198 males and 86 females, satisfactorily completed the instrument.

The involvement scale developed by Slama and Tashchian contains thirty-three items related to issues like interest in shopping, relevance of purchase information, bargain consciousness, time invested in shopping, and the importance of searching out and weighing purchase alternatives. The scale items are measured on six point Likert-type scales without a "no opinion" midpoint. The Slama and Tashchian (1985) scale is used rather than the Zaichkowsky (1985) or

Table 3
Sample Items from the Purchasing Involvement and CAD Scales

*The Purchasing Involvement Scale**

- On most purchase decisions the choice I make is of little importance.
- I have little or no interest in shopping.
- I often take advantage of coupon offers in the newspapers.
- Being a smart shopper is worth the extra time it takes.
- I am not really committed to getting the most for my money.

*CAD Scale***Compliant*

- Giving comfort to those in need of friends is: The knowledge that most people would be fond of me at all times would be:
- To feel that I like everyone I know would be:

Aggressive

- To refuse to give in to others in an argument seems: Using pull to get ahead would be:
- To work under tension would be:

Detached

- Being free of emotional ties with others is: Enjoying a good movie by myself is: For me to pay little attention to what others think of me seems:

*The purchasing involvement scale responses were recorded on six point Likert type scales. The CAD items were measured using six point scales anchored by extremely desirable and extremely undesirable.

Laurent and Kapferer (1985) scales because it measures generalized purchasing involvement as discussed by Kassarijian (1981) rather than product involvement which the other two scales measure. The CAD scale developed by Cohen is composed of thirty-five items, ten each for the compliant and detached dimensions and fifteen for the aggressive dimension measured on six point semantic differential scales. It is hypothesized that compliant personality types will score lower on involvement than other personality types.

While the Slama and Tashchian scale has recently been favorably assessed in terms of reliability and validity, there is some question as to the validity of the CAD scale. Cohen put considerable effort into testing the reliability and validity of the CAD with generally positive results (1967). However, subsequent assessments of the reliability and validity of the instrument have yielded mixed results (Heeler and Ray 1972; Noerager 1979; Tyagi 1983). The error introduced by this imperfect measure is likely to attenuate the expected relationship between purchasing involvement and detachment and is a limitation of the research. In defense of the CAD it should be noted that each personality type (compliant, aggressive and detached) is supposed to possess numerous traits and not represent merely a unidimensional construct, therefore, most previous analyses of the instrument which focus on factorial structure or internal consistency are not as

relevant as would be an assessment of the CAD's predictive validity. The degree to which detached personality type individuals score lower on involvement than other members of the sample will serve as a partial validation of the CAD scale as well as an interesting substantive finding.

When Cohen applied the CAD measure, he treated the three personality dimensions as independent of one another and considered a person to be high on a particular dimension if the summated score on the test items was above the median of all respondents. This means that a given person could score high on none, one, two or all three of the scale dimensions. Subsequent research on the CAD has generally followed the same procedure. Consistent with Cohen's criterion, subjects in this study were originally rated high on a given dimension if they scored above the median for all respondents and low if their score on the scale fell below the median. On this basis, only about one third of the respondents were dominant on a single dimension and eighty-four of the 284 respondents (30%) scored high or low on all three dimensions.

In his discussion of method, Cohen (1967) noted that the best way for determining a respondent's dominant personality orientation would be to use the set of three scores taken together to classify individuals. Therefore, we reanalyzed the data taking that approach. Rather than considering a person high on a trait when their score was above the median for that trait as Cohen did, the top quartile for all three traits were used in classifying each respondent in this study. Respondents were classified as high on a given trait if their score on that trait was in the top quartile and their scores for the other two traits were below the top quartiles for scores on those traits. Thus, each personality type included for analysis was of a "pure" CAD orientation, scoring high in one trait and low in the other two. This reduced the sample size to 124, 84 males and 40 females, who were high on only one personality dimension. The results of this grouping along with the mean involvement scale score for each group is shown in Table 4.

The mean involvement values across the three "pure" personality types support the hypothesis that detached persons ($x = 122.4$) are less involved in purchasing than compliant ($x = 132.6$) or aggressive ($x = 133.2$) people ($F = 4.37$, $p = .02$). Detached female respondents ($x = 117.0$) were significantly lower ($p = .01$) in involvement than either compliant ($x = 137.1$) or aggressive ($x = 144.9$) females. Detached male respondents ($x = 125.7$) were lower in involvement than aggressive ($x = 130.4$) or compliant ($x = 129.5$) males, but the difference was not statistically significant.

Discussion

The results of this study support Kassarian's theory that consumer characteristics (personality types in this case) are related to generalized purchasing involvement. The attainment of the expected results also helps to validate the purchasing involvement scale, although it is clear that the CAD scale requires further development and that its lack of demonstrated reliability and validity is a limitation of the generalizability of these substantive findings.

The results encourage an examination of how low involvement purchasers behave in the marketplace. Do they exhibit the type of shopping behavior Kassarian associated with the low involvement "detached" type and the low involvement "know nothing"? For example, low involvement "detached" consumers would be expected to exhibit "narrowly and intensely focused" effort in a high involvement purchase situation. Low involvement "know nothings" would be expected to focus on factors such as packaging and affordability; in a high involvement purchase situation. Both types of low involvement consumers are expected to behave in an essentially random fashion for low involvement purchase situations.

In addition, the findings would encourage work on how the generalized purchasing involvement variable relates to other consumer behavior variables. For example, how does generalized purchasing involvement affect retail outlet selection? Does the importance of store image attributes vary with generalized purchasing involvement? On the product level, how do the type of evaluative criteria and how they are used vary with the consumer's level of purchasing involvement? Furthermore, how does generalized purchasing involvement relate to the "market maven" (Feick and Price 1987) concept? The answers to these and other questions will lead to a better understanding of generalized purchasing involvement as a variable influencing consumer behavior.

A broader issue concerns the relationship between generalized purchasing involvement and other forms of involvement currently appearing in the consumer behavior literature. Zaichkowsky (1986) has identified involvement research streams associated with products, advertisements and purchase decisions. Richins and Bloch (1986) have demonstrated the distinction between enduring product involvement and situational product involvement. At the 1986 ACR conference sessions were held to discuss "deep involvement." How do all of these involvements relate to each other?

Table 4
Involvement Scale Scores by Dominant CAD Personality Type

Personality Type	Males ^a		Mean Involvement Score		Females ^b		Total Sample ^c	
	n	Score	n	Score	n	Score	n	Score
Compliant	26	129.46	18	137.11	44	132.59		
Aggressive	38	130.37	10	144.00	48	133.21		
Detached	20	125.70	12	117.00	32	122.44		
	84	128.98	40	132.80	124	130.21		

^a $F = .65$, $p = .53$

^b $F = 5.62$, $p < .01$

^c $F = 4.37$, $p < .02$

Recognizing Rothschild's (1984) concerns over premature theorizing in the involvement area it is modestly suggested that all of these involvements are propensities for interaction between stimuli and people which vary in focus, intensity and duration. Figure 1 illustrates how current involvement topics could be described in three dimensional space.

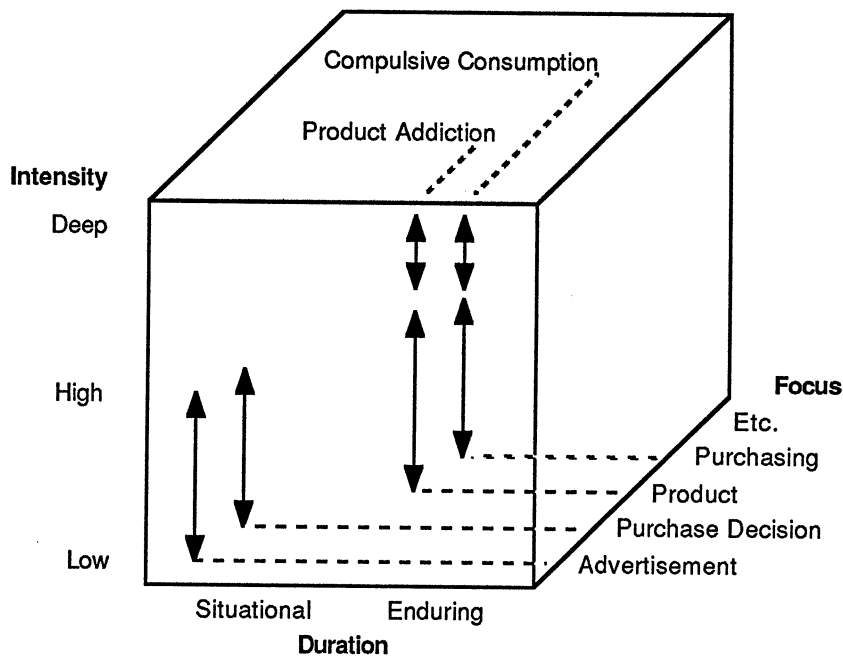
Generalized purchasing involvement, as studied here, is shown as a double ended arrow on the right side of Figure 1. Its focus is purchasing (across products and situations). Its duration is enduring and its intensity varies from low to high. Also focused on purchasing is compulsive consumption (Faber, O'Guinn and Krych 1987) which appears above generalized purchasing involvement in Figure 1. It is enduring, but, differs from generalized purchasing involvement by having a very "deep" intensity.

Enduring product involvement (Bloch 1986; Richins and Bloch 1986) is shown next to generalized purchasing involvement. It is focused on a product and is enduring. Its intensity varies from low to high. At very deep intensities enduring product involvement could take on the characteristics of an obsession or addiction (Bloch 1986). This is shown as "product addiction" above enduring product involvement in Figure 1.

To the left of enduring product involvement in Figure 1 is purchase decision involvement which is often referred to as situational product involvement (Kapferer and Laurent 1986; Richins and Bloch 1986). It is focused on a purchase decision, short in duration and can vary from low to high in intensity. Advertisement involvement is also short in duration and varies from low to high intensity, but, is focused on an advertisement rather than a purchase decision.

It is apparent from Figure 1 that a multitude of involvement relationships varying in focus, intensity and duration could be studied in the consumer behavior context. In this sense involvement may be similar to attitudes in that the level of specificity in measuring individual differences in the intensity involvement relationships should be a function of the type of behavior the researcher is interested in predicting. For example, search behavior for a specific purchase decision might be best predicted by individual differences in the intensity of purchase decision involvement. The intensity of purchase decision involvement would be measured by specifying the exact product and situation (gift, personal, special occasion etc.) and then measuring the salience of that purchase situation to the individual. The Zaichkowsky (1985) involvement scale can be

Figure 1
Consumer Involvement Parameters of Focus, Intensity and Duration:
Used to Describe Current Involvement Types



↕ Range of intensity often measured by involvement scales

----- Indicates focus or description of the involvement relationship

* Purchase decision involvement is often discussed as situational product involvement.

adapted to this purpose. The risk components of the Laurent and Kapferer (1985) scale also tend to capture this type of purchase specific involvement.

If, however, the researcher is interested in identifying opinion leaders or innovators for a particular product category the appropriate type of involvement would be enduring product involvement (Bloch 1986). Enduring product involvement has a more general impact on product related behaviors than purchase decision involvement. Its intensity can be measured using the sign, interest and pleasure components of the Laurent and Kapferer scale or by using the Zaichkowsky scale. Finally, if the researcher were interested in general sensitivity to retail promotion or shopping area selection then the generalized purchasing involvement scale created by Slama and Tashchian (1985) would be appropriate.

The findings of this study focus on generalized purchasing involvement. To date generalized purchasing involvement has been shown to correlate with search effort (Slama and Tashchian 1983), to relate predictably to demographic variables (Slama and Tashchian 1985) to correlate significantly with Rokeach values (Williams, Parent and Rogers 1987) and to be related to personality type in the current research. These findings along with the work done on compulsive consumption (Faber, O'Guinn and Krych 1987) and market mavens (Feick and Price 1987) suggest that generalized purchasing involvement may be a human trait of importance to consumer research and *not* just a measurement artifact.

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Consumer-Object Relations: A Conceptual Framework Based Analogously on Sternberg's Triangular Theory of Love

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Abstract

This paper adapts Sternberg's (1986) triangular theory of love to the study of consumer-object relations. We argue that the protean character of CORs has not been captured by prior conceptualizations in consumer research. Our conceptual scheme, pursuant to Sternberg's theory, is based on the view that three common psychological processes--motivation, emotion, and cognition--interact in various combinations to determine the nature of consumers' relations with consumption objects. We conceptualize eight types of CORs by considering every combination of the three underlying psychological components.

Introduction

This paper develops the notion of consumer-object relations. We argue that consumers form relations with consumption objects (products, brands, stores, etc.), which range from feelings of antipathy, to slight fondness, all the way up to what would, in person-person relations, amount to love. The consumer-object counterpart to love is similar to the notion of extreme product enthusiasm (Bloch 1986). Various concepts have appeared in the consumer behavior literature, which, though heretofore not viewed as such, involve consumer-object relations (cf. Howard 1977, p. 42). Relational concepts at the brand level include familiar terms such as brand attitude and brand loyalty.

What we intend to argue is that these various concepts have lacked a common linkage and unifying framework. We propose such a framework by adapting Sternberg's (1986) triangular theory of love. By drawing analogies between Sternberg's person-person relations and consumer-object relations, we have derived a set of concepts which hopefully will lead to a better understanding of the rich diversity of relations that consumers experience with consumption objects. It should be clear from the start that love merely provides us with a useful metaphor (cf. Arndt 1985) for characterizing consumer-object relations. We fully recognize that love relations between people are probably much more complex and certainly more bidirectional than are relations consumers have with inanimate consumption objects.

Person-Person Vs. Consumer-Object Relations

The term, relations, is used here in the standard dictionary sense to capture the idea of a connection or association between or among things. Howard (1977) has talked about consumer-brand relations, but consumer researchers more typically have used terms borrowed from psychology such as attitude, feeling, and involvement to characterize consumers' interactions with products, brands, and other consumption objects. We prefer the term relations over these more conventional terms because it enables us to present a set of concepts which are not constrained by past biases associated with terms such as attitude.

Consumer-object relations, or CORs for short, are qualitatively different from person-person relations, or

PPRs. Love by its very nature involves a relationship between two people and not the two people individually (cf. Rubin 1970). As stated poetically by Buber (1970), "Love does not cling to an I, as if the Thou were merely its 'content' or 'object'; it is between I and Thou." Comparatively, the relationship between consumers and objects is typically unidirectional. The consumer may feel a strong sense of attachment and caring for a consumption object, but the object cannot love back nor initiate the relationship. (An exception occurs when the consumption object is animate such as with purchases of pets; moreover, marketing communicators, in their role as proxies for the objects they so vigorously promote, attempt to initiate relationships between their offerings and the potential purchasers of these objects). Yet there are sufficient similarities to allow meaningful analogies. The logic of CORs applies to all classes of relations between consumers and consumption objects--consumers' relations with products, brands, stores, advertisements, and so on.

We present Sternberg's theory of love in the following section as a backdrop to our discussion of consumer-object relations. We then argue with analogous reasoning how the various types of love relations correspond with consumer-object relations. Resulting is a new set of concepts describing various forms of consumer-object relations.

Fundamentals of Sternberg's Triangular Theory of Love

Sternberg's (1986) theory of love employs a triangle metaphor for conceptualizing the interrelations among three fundamental components of love: intimacy, passion, and decision/commitment. Various instantiations of these three components lead to eight different types of love and provide answers to the research questions which motivated Sternberg's conceptual efforts: "What does it mean to love someone? Does it always mean the same thing, and if not, in what ways do lovers differ from each other? Why do certain loves seem to last, whereas others disappear almost as quickly as they are formed?" (Sternberg 1986, p. 119).

Slight alterations to Sternberg's queries suggest the relevance of similar issues to understanding consumer behavior. For example, what does it mean to love a product or particular brand? Why does brand loyalty sometimes last for prolonged periods, whereas in other cases brand switching takes over quickly?

Intimacy

Intimacy, the *emotional* basis of love relations, refers to "feelings of closeness, connectedness, and bondedness" (Sternberg 1986, p. 119) and also includes sharing, feelings of emotional support, holding another in high regard, and having intimate communication. These feelings are the basis for the "warmth" in loving relations.

Liking--The COR Counterpart to Intimacy:

Intimacy is also present in consumer-object relations. Consumers often have feelings of closeness and connectedness with consumption objects. Proof positive

are the personal accounts provided by individuals interviewed by Csikszentmihalyi and Rochberg-Halton (1981) in describing the meaning and significance which various household objects hold for them.

Intimacy in CORs probably is more aptly labeled "liking." The liking component refers to feelings such as attachment to and fondness for as well as the properties Sternberg ascribes to intimacy--i.e., closeness, connectedness, and bondedness. Clearly, consumers develop strong feelings of closeness and connectedness with consumption objects throughout their lives. For example, a child is inseparable from a cherished blanket or doll. An adult considers a treasured furniture item, sculpture, or painting as if it were part of him/her. A certain item of apparel is like an old friend, something which provides tactile pleasure as well as, perhaps, a link to past positive associations (cf. Solomon's 1986 discussion of Levi 501 jeans). A boat, a shotgun, jewelry, a beloved athletic team, and innumerable other items develop symbolic significance to their owners and become part of the owner's personal identity, self image, and self esteem (cf. Schenk and Holman 1980).

Described above are objects falling toward the "strong positive" end of the liking continuum. Most products (as well as brands and other consumption objects) cluster, of course, around the midpoint of this theoretical continuum. That is, they are not particularly liked nor disliked; they perform a function and are valued for that function, absent of any particular bonding to, attachment with, or special fondness to their owners. At the same time, there are products which have "strong negative" affect for their owners. "I despise that painting," and "I hate this damn car" illustrate this polar end of the liking qua intimacy component.

Passion

Passion, the *motivational* component of Sternberg's theory, refers to "the drives that lead to romance, physical attraction, sexual consummation, and related phenomena in loving relationships" (1986, p. 119). These notions are decidedly restricted to PPRs. However, Sternberg's theory includes other needs within the passion component that appear applicable also to CORs. These include "self-esteem, succorance, nurturance, affiliation, dominance, submission, and self-actualization" (p. 122). For example, people turn to cherished consumption objects for succor during periods of sadness, anxiety, fear, and depression (e.g., a child's teddy bear; an adult's rocking chair or photograph). Furthermore, products and brands often serve as symbols for consumers' affiliation, dominance, and self-actualization needs.

Yearning--The COR Counterpart to Passion: "The passion component of love will almost certainly be highly and reciprocally interactive with intimacy" (Sternberg, p. 122). As such, consumers sometimes have passion-like feelings for products, brands, etc. These feelings, as in love relations, are relatively ephemeral compared to the other two components. For example, consumers go through periods where they just can't consume enough of certain products/brands. Holbrook's (1986) "I'm Hip" autobiographical sketch provides anecdotal evidence of one person's passionate relationship with jazz music.

"Yearning" is an apt substitute for passion when applied to CORs. Yearning is used here in the dictionary sense to mean having an earnest or strong desire for

something. As with the other components of the COR triangle, yearning is intended to represent a continuum of possibilities. At the "strong positive" end, yearning is represented by "wish lists" constantly occupying the consumer's thoughts. The deep desire to learn to play the piano, the fantasy to own a special sports car, and the intense excitement over the prospects of getting a new toy for Christmas or of building one's dream home represent extreme forms of yearning. The desire to purchase a new suit, to try a new restaurant, to attend an upcoming ballgame, or to go to a new play all illustrate more moderate levels of yearning. "Strong negative" yearning also applies in various aversive types of consumption contexts. For example, one may tremble at the thought of going to the dentist or revolt at the idea of having to sit through, say, a spectator sport or operatic performance with a spouse(friend) who holds an opposite yearning toward that event.

Decision/Commitment

This encompasses the *cognitive* aspect of Sternberg's theory. "Decision is the short term recognition that one loves someone else, whereas commitment is the long term intention to maintain that love" (1986, p. 119).

The decision/commitment component is probably the easiest to draw analogs between PPRs and CORs. For example, in the short term consumers decide they like a particular product/brand because its attributes/benefits are compatible with what the consumer is seeking. In the long term, consumers become committed to brands as a matter of loyalty, inertia, or other factors leading to repeat purchase behavior. Illustrations of commitment are found anecdotally in statements such as: "I'm a New York Mets fan"; "I'm a Bud drinker."

Sternberg's terms, decision and commitment, are appropriate terms for also characterizing consumer-object relations. In the short term, a consumer decides he loves Lean Cuisine; another consumer is fully cognizant that she loves Dove Bars; yet another consumer decides he would love to take piano lessons because he is captivated by the thought of being able to impress his friends.

In the long term, consumers develop varying degrees of commitment to consumption objects. At the "strong positive" pole, consumers are firmly committed to certain products, brands, and stores because they have developed strong preferences for them, have found them to be the best in the category, or because they truly "love" them, i.e., feel some deep sense of affection for a product (e.g., the car buff; cf. Bloch 1981) or a store (e.g., the "Bloomingdale's customer"); and so on. At the "strong negative" end, consumers often express committed opposition to certain brands or categories of products. For example, anecdotally, "I would never buy an American-made car" or "I wouldn't wear polyester clothing for anything in the world" typify this type of negative long-term commitment to avoid a particular consumption object.

In Sum

The discussion to this point has presented the three components of Sternberg's theory of love and has shown how these components have analogs in consumer-object relations. The comparisons are summarized in Figure 1, which shows that Sternberg's components and the corresponding consumer-object components are connected by common psychological processes, namely a "cold" component (cognition), a "warm" component

Figure 1
Components of PPRs and CORs

Psychological process	Sternberg's component	Consumer-object process analog
Cognition	Decision/commitment	Decision/commitment
Emotion	Intimacy	Liking
Motivation	Passion	Yearning

(emotion), and a "hot" component (motivation) (cf. Sternberg 1986, p. 119).

Eight Kinds of Love

Sternberg's three components give rise to eight kinds of love, each derived by considering the presence or absence of the three components. For example, "nonlove" (see Figure 2) is the absence of any intimacy, passion, or commitment toward another individual, whereas "consummate love" at the polar extreme describes the situation where all three components are present. The intervening forms of love, as can be seen in Figure 2, reflect either the presence (+) or absence (-) of the three underlying components. For example, "romantic love" represents a relationship between two individuals in which intimacy and passion are present but no commitment exists to maintain the relationship over an extended period.

Figure 2
Sternberg's Eight Kinds of Love[a]

Kind of love	Component		
	Intimacy	Passion	Decision/commitment
1. Nonlove	-	-	-
2. Liking	+	-	-
3. Infatuated love	-	+	-
4. Empty love	-	-	+
5. Romantic love	+	+	-
6. Companionate love	+	-	+
7. Fatuous love	-	+	+
8. Consummate love	+	+	+

[a]Cell entries represent the presence (+) or absence (-) of each concept-defining component.

A Conceptual Framework of Consumer-Object Relations

Having laid out the fundamentals of Sternberg's theory, we now develop the case that these different kinds of love have conceptual counterparts in consumer-object relations.

Consumer-object relationships, we argue, are based on the same underlying psychological processes--liking (emotion), yearning (motivation), and commitment/decision (cognition)--as the love relationships identified by Sternberg. The following concepts identify varying types of consumer relations. In a sense, each of these concepts can be viewed as a

special type of attitude. Indeed, just as love itself represents a special type of attitude (Rubin 1970), consumer-object relationships also are attitudes varying in their direction and intensity.

Correspondent to Sternberg's eight kinds of love, the following concepts progress from nonliking, the absence of any liking, yearning, or commitment to a brand, all the way to loyalty, which represents the presence of all three components. Presence or absence of each component is represented with pluses and minuses. Presenting each component in binary terms is a necessary simplification. Each component actually ranges along a continuum from negative to positive, but it is necessary to disregard the continua in order to derive a tractable number of concepts. Figure 3 identifies eight kinds of consumer object relations.

Figure 3
Eight Kinds of Consumer-Object Relations[a]

Kind of relation	Component		
	Liking	Yearning	Decision/Commitment
1. Nonliking	-	-	-
2. Liking	+	-	-
3. Infatuation	-	+	-
4. Functionalism	-	-	+
5. Inhibited desire	+	+	-
6. Utilitarianism	+	-	+
7. Succumbed desire	-	+	+
8. Loyalty	+	+	+

[a]Cell entries represent the presence (+) or absence (-) of each concept-defining component.

For clarity of exposition, the following discussion focuses on the brand level of consumer-object relations. This emphasis is appropriate when recognizing that brand loyalty, arguably the most fully conceptualized concept in the field of consumer research (cf. Jacoby and Chestnut 1978), is itself a brand-level concept. Also, the following discussions emphasize the positive aspect of each conceptual component and not the negative. Finally, each relational type is keyed to Figure 3 by indicating for each component (L = Liking; Y = Yearning; and D = Decision/commitment) whether the component is present (+) or absent (-).

Nonliking [L(-) Y(-) D(-)]

Nonliking does not mean disliking; rather, it characterizes those relations in which consumers have no particular feelings for a product or brand. Probably the bulk of consumer-object relations involve nonliking. Nonliking relations are expected to be particularly prevalent in at least two different situations: (1) for product categories which the consumer is not involved with, and (2) product categories in which the consumer already has established strong loyalty(ies) to one or more brands; all other brands involve nonliking relations for the consumer.

Liking [L(+) Y(-) D(-)]

Liking relations are those where consumers feel some degree of affinity for a particular brand but have no particular desire to own nor purchase the brand. In other words, there is no yearning, the motivational force, or

decision/commitment to want to acquire a brand which is merely liked. On the other hand, a liking relationship does not preclude the possibility that the consumer may at times purchase a brand which is merely liked. By analogy, each of us likes many individuals, but this liking exists in the absence of any passion for these individuals or any commitment to be in love with them.

Infatuation [L(-) Y(+) D(-)]

Infatuation is characterized by the presence of a strong yearning for a particular product/brand in the absence of any strong liking or even desire to consume that item for any length of time. This form of relationship applies to fad products, especially ones where there exist strong peer pressure to possess the product or engage in a particular behavior. Youthful consumers, it would seem, are particularly likely to have infatuated product relations. (The reader can perhaps recall feeling pressure in grammar school or high school to possess some product which he or she may not even have liked that much; however, the fact that referent others owned the product/brand made it irresistible.) In general, brands which satisfy symbolic needs (i.e., fulfill "internally generated needs for self-enhancement, role position, group membership, or ego-identification) as opposed to functional needs (Park, Jaworski, and MacInnis 1986, p. 136) would seem especially prone to infatuated relations.

Functionalism [L(-) Y(-) D(+)]

Functionalistic relations are those where a consumer decides to purchase a particular brand/product in the absence of any strong emotional attachment to an item or yearning for it. The mental set for such objects is one of pure functionalism. For example, "I intend to replace the old faucets with the same brand as the house contractor installed because the old ones are worn out and I don't want to try a different brand." Park et al.'s (1986) notion of functional needs would apply to this brand concept. That is, the purchase is undertaken to "solve a current problem, prevent a potential problem, resolve conflict, [or] to restructure a frustrating situation" (p. 136).

Inhibited Desire [L(+) Y(+) D(-)]

This relationship is termed inhibited desire to capture the belief that the only reason consumers would not decide to want/own a particular product when they like and yearn for that product is because some constraint discourages the behavior. For example, a preteen girl may have a strong desire to start using lipstick but be constrained by her parents not to use the product. Similarly, an adult may not decide to purchase a particular new sports car model, at least in the short term, because limited financial resources, spousal pressure, or other inhibitors prevent him/her from actualizing these desires.

Utilitarianism [L(+) Y(-) D(+)]

This form of COR is probably the most frequent next to nonliking relations. Consumers form attachments to and fondness for particular products/brands and also are committed to using/consuming the object but do not have a passionate relation with it. A situation such as this defines repeat purchasing in the absence of loyalty toward the consumption object.

Succumbed Desire [L(-) Y(+) D(+)]

Whereas Sternberg's conceptual counterpart to succumbed desire, fatuous love (the presence of passion and decision/commitment in the absence of intimacy), is a prevalent form of love, it is more difficult to envisage this correspondent type of relationship between consumers and consumption objects. How or why could someone decide to want a particular product/brand and feel a strong motivation to purchase the product/brand but without any particular liking for that item?

A plausible explanation, making succumbed desire a meaningful concept, rests with the idea that situational pressures sometimes force consumers to give in, i.e., succumb, to the wishes and desires of external sources such as family, friends, and religious institutions. For example, a business executive is motivated, against his/her personal whims, to purchase an American-made automobile rather than the classy European import s/he really wants, because the corporate culture encourages signs that its employees support American products and companies.

Loyalty [L(+) Y(+) D(+)]

The final type of consumer-object relation is one where the consumer feels an intimate relation with a particular brand, has a strong yearning to purchase or repurchase the brand, and is committed, at least in the short term, to support that particular brand. This of course corresponds closely with the traditional concept of brand loyalty, which is defined as the combination of repeat purchasing along with commitment to a brand (cf. Jacoby and Chestnut 1978).

Perhaps the best illustration of loyalty in American culture is in the area of sports. Many consumers are truly in love with their favorite team. Liking (qua intimacy), yearning (qua passion), and decision/commitment are often incredibly strong; in fact, every bit as strong as what is observed between people who are in love. Consumers' relations with inanimate objects are rarely as strong, yet strong loyalty is known to exist across a variety of consumer packaged goods (soft drinks, beer, cigarettes, etc.).

The Dynamic Nature of Consumer-Object Relations

Relationships, either between people or people and objects, are not static. For each of the three components underlying loving relations, Sternberg proposes a nonlinear function over the duration of the relationship. In general, the intensity of each component increases over time, reaches an asymptote, and then levels off or begins its decline. We briefly examine the three courses specified by Sternberg and again draw analogies to consumer-object relations.

The course of the *intimacy* component is based on Berscheid's (1983) theory of emotion. Intimacy grows gradually because early in the relationship one is unable to predict the emotions, motivations, and cognitions of the other; this lack of interpersonal knowledge creates disruptions in the relation. However, as the actors in the dyad become more familiar, they form increasing numbers of paired action sequences, or scripts, and, as the amount of disruptions decreases so does the emotion in the relationship. Sternberg aptly points out a difference in the manifest and latent levels of intimacy. Successful relationships are those where the latent level is increasing even though the manifest level may be decreasing. That is, as the relationship matures, the

level of intimacy appears to decline; however, the latent level may in fact be growing.

The same functional relationship should exist for CORs. The amount of emotional attachment (liking) for a brand grows gradually and eventually reaches a peak. Latent liking may exist in the absence of manifest liking; i.e., the consumer may not continue to repeat purchase a particular brand even though s/he likes the brand. Consumers may not be aware of the liking they have for an object until the object is no longer available. Consider, for example, the outcry that ensued when Coca-Cola replaced traditional Coke with a revised formulation.

Turning to the *passion* component, Sternberg draws on Solomon's (1980) opponent-process theory of acquired motivation to specify the course of this particular aspect of love. The level of passion, in opponent-process terms, results from both positive and negative drives toward another person. The positive force develops and fades quickly—a surge of initial arousal levels off or habituates with the passage of time. Negative motivation toward the other individual sets in at a later time. The result from these opponent processes is an overall level of motivation/passion which is lower than the habituated level of the positive drive alone.

The corresponding component of passion in CORs is yearning. We propose that yearning, like passion, habituates over the duration of a consumer's relationship with a consumption object as the result of decreasing marginal utility. For example, McAlister and Pessemier (1982), pursuant to Jeuland (1978), note in their review of variety-seeking behavior that preference for a behavior declines as one accumulates experience with it. Moreover, if experience fades then preference for the behavior can recover. Hence we argue that the level of yearning for an object will covary with experience. Consumers can experience great passion (yearning) for an object upon initial experience with it but this yearning should subside over time as the consumer acquires more experience with the object (cf. Richins and Bloch 1986).

Finally, as previously discussed, we expect the *decision/commitment* component of PPRs and CORs to behave similarly for both types of relationships. In successful relationships the course follows a logistical or S-shape curve; the increase in commitment grows gradually at first then increases rapidly until it finally levels off.

Conclusion

We have argued that Sternberg's (1986) provocative theory of love has correspondence in the domain of consumer-object relations. We have attempted to establish a new way of looking at consumer-object relations and provide a set of concepts that expand extant perspectives involving CORs. Consumer-object relations arise from various combinations of different psychological processes—motivation, emotion and cognition—but prior conceptualizations in consumer research have not explicitly recognized the combinations of these processes. By adapting Sternberg's application to person-person love relations, we have derived eight concepts which span the gamut from nonliking to loyalty. By conceptualizing each of the concepts in terms of the same psychological processes we are able to offer a unified framework of CORs which captures the protean character of consumers' relations with products, brands, stores, and other consumption objects.

A necessary next step is developing psychometric scales to measure each of the components comprising consumer-object relations. Precedent is provided in the research by Sternberg and Grajek (1984) and the earlier work by Rubin (1970). These researchers have constructed and tested valid measures of the components underlying love relationships, which suggests that it also is possible to rigorously measure consumers' liking, yearning, and decision/commitment for consumption objects. Research is needed also to study the dynamic character of the psychological processes underlying consumer-object relations.

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Factors Affecting the Use of Conceptually Driven and Data Driven Processing

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Abstract

When apprehending new information, people may engage in data driven processing, which involves a detailed analysis of the incoming information, or they may pursue conceptually driven processing whereby apprehension is more cursory and largely guided by preexisting knowledge. A study is reported that examines the effects of the level and salience of cue incongruity on males' and females' choice of processing strategies. It is found that unless motivated by unequivocal evidence of incongruity, males favored the use of conceptually driven processing. Females, however, reliably employed data driven processing even when cue incongruity was less easily detected. The implication of these findings for consumer behavior is discussed.

Introduction

A recurrent theme in cognitive psychology is that the processing of information can be thought of as occurring in two modes (Bobrow and Norman 1975). One mode involves performing a detailed analysis of incoming stimulus cues in an effort to assemble cues into a coherent higher order representation. This analysis, which is referred to as data driven processing (DDP), typically results in a highly veridical representation (Glass, Holyoak and Santa 1979). The other mode of processing simplifies operations by relying more heavily upon existing schematic knowledge. Referred to as conceptually driven processing (CDP), this mode of processing entails drawing on existing schematic knowledge to form expectations about incoming information. These expectations are then used to guide processing such that incoming cues are coalesced with memory-based information, thereby further instantiating preexisting knowledge. These two processing strategies can be thought of as falling on a continuum in which both are often simultaneously activated (Anderson 1983) but a relative emphasis is devoted either to CD or DDP depending on the prevailing task conditions¹.

The use of CDP has virtues as well as liabilities. Schematic knowledge that is activated during such processing provides a ready structure to impose on stimuli that might otherwise overwhelm the processor. Thus, CDP is believed to offer substantial survival value (Bairick 1984) and is thought to be cognitively efficient because it circumvents more effortful detailed analysis of the stimulus (Taylor and Crocker 1981). At the same time, CDP has been found to impair accurate memory for the particular information presented at acquisition because stimulus cues are subjected to considerable assimilation and abstraction to accommodate them with prior knowledge (Alba and Hasher 1983). Moreover, schema-based inferences generated during CDP are sometimes confused with actual stimulus features leading to false intrusions of never-presented but schematically

congruent stimulus features (Bower, Black and Turner 1979).

Given that CDP is characterized by both assets and liabilities, it follows that some conditions are likely to prompt the use of DD processing, which at times may be more adaptive. Recent inquiry in social cognition implies that schema-incongruent or discrepant stimulus cues can motivate such processing (Hastie 1980, 1981; Srull 1981). In this research, subjects are typically asked to form an impression of a person and are led to expect that this individual possesses a particular trait. Subjects then are presented with a list of various behaviors engaged in by the person of which some are congruent and others are incongruent with schematic knowledge implied by the trait.

The recurring finding in these studies is that the presence of incongruent cues enhances accurate recall of all stimulus information, though the proportion of incongruent cues recalled typically exceeds that of congruent cues. This outcome is thought to occur because in an effort to make sense of the incongruous cues, individuals consider them in relation to congruent stimulus items that already have been encountered. Hence, associative linkages are formed between incongruent and congruent cues, which benefit memory for all the stimulus information. Thus, the view that emerges is that cue incongruity serves as a motivational device to prompt DDP, which is manifested in substantial accurate recall of the stimulus information. Moreover, the incidence of false intrusions during DDP is minimal (c.f. Mandler 1980).

Cue incongruity is often used in advertisements directed at consumers. For example, an ad that introduces desert spice scent Sure deodorant depicts the physical product protruding from a deodorant container in an incongruent form that resembles desert terrain. An ad for Pall Mall cigarettes with filters heralds the product as "a mild breakthrough" by showing an oversized package of the cigarettes breaking through the roof of a barn. Given the frequent use of incongruity in ads, it is not surprising that consumer researchers have examined the effect of cue incongruity on processing. Similar conclusions obtain as those implied by the social cognition studies. For example, Sujan (1985) found that when product information was entirely consistent with subjects' preconceptions, processing appeared to be CD in that it centered on the rehearsal of subjects' prior product knowledge. But when the message contained incongruent information, individuals' processing appeared to be more DD: Relative to subjects in the former condition, those exposed to incongruity engaged in greater cognition and produced both more attribute specific thoughts. These effects, however, emerged only among subjects who were experts concerning the product category. Apparently because novices' limited knowledge of the category impaired their detection of the incongruity, novices were not motivated to employ DDP.

The preceding analysis suggests that message inclusion of incongruent information may not always stimulate DDP. People may fail to detect cue incongruity for a variety of reasons and therefore may not engage in DDP. For example, incongruity might not be detected if the incongruent cues are only mildly discrepant with

¹ While it is understood that processing typically entails some degree of both CD and DD modes of analysis, for ease of exposition these terms will be used to connote a relative emphasis on one of these strategies.

other stimulus cues or if contextual factors reduce the attention devoted to the incongruent cues. In addition, individual differences in processing proclivities may limit the use of DD analysis.

This article investigates the conditions under which people invoke CD and DDP strategies. Two factors thought to moderate the influence of cue incongruity on processing strategy were examined: the difficulty of detecting cue incongruity and general differences in the genders' processing proclivities. These factors are of interest to consumer researchers because, as discussed earlier, incongruity is often employed in messages targeted at males and/or females. Thus, it would seem important to determine whether some incongruent cues may go relatively unnoticed and fail to induce DDP, and whether the genders might sometimes be differentially responsive to incongruity. A discussion of these moderating factors follows.

Factors Affecting the Detection of Cue Incongruity

An assumption in the incongruity research is that the processor necessarily detects cue incongruity and this in turn motivates DDP. However research by Hastie and colleagues (cited in Hastie 1980) suggests that one's choice of processing strategy may be contingent upon the level of cue incongruity. Cues that are low in incongruity may fail to motivate the use of DDP because the modestly aberrant content of these cues may be perceived not as incongruent but rather as fairly irrelevant to the stimulus-implied schema. As Alba and Hasher (1983) have noted, irrelevant cues may receive little or no elaborative processing. These cues can be assimilated quite readily then with schematically congruent cues in a CD fashion. Thus, cues that are modestly atypical but not in clear opposition to the schema may fail to invoke the associative activity that characterizes DD processing. This implies that DDP will occur when the content of selected stimulus cues is relatively high in incongruity but CDP will occur when this content is low in incongruity.

Detection of cue incongruity may also be influenced by the contextual salience of the incongruent cues. It would seem possible that even cues low in incongruity might be perceived as incongruent if they were made highly salient to the processor. Suppose, for example, that these low incongruity cues were positioned in a text-like message as discrete nonsequential cues (e.g. two incongruent items separated by two intervening congruent cues). The temporally distinct multiple exposures to the incongruent information might promote the detection and elaboration of the cues' incongruous qualities such that DDP would be stimulated. By contrast, if these low incongruity cues were presented contiguously in the stimulus message, thereby appearing as a unitary mass of incongruent information, the processor might be especially likely to overlook this singular unitized instance of low incongruity information and process the information in a CD manner². Hence, contextual factors such as the positioning of incongruent cues within a message also are hypothesized to influence the choice of processing strategy.

² This hypothesis concerning cue positioning is based on the results of studies that have examined the "spacing effect." Such studies consistently find that memory for a repeated item is enhanced when repetitions are discretely spaced rather than massed (Hintzman 1974).

Individual Differences with Regard to Gender

Finally, there is reason to believe that individual differences in terms of gender enhance the likelihood that either CD or DDP will be employed. Studies in the gender literature suggest that males may exhibit a greater propensity to engage in CDP relative to females, who may favor DD processing. For example, in a study by Christensen and Rosenthal (1982) males and females were provided with an expectancy about a person prior to their interviewing this individual. It was found that males' judgments were largely CD, reflecting the predominate use of the expectancy information. Females' judgments were more sensitive to information encountered during the interview, implying the use of DDP. Virtually identical outcomes have been reported by Farina (1982) who investigated the effect of stereotypes on the genders' judgments. Male job interviewers were very unfavorable toward a confederate interviewee who was described as a former mental patient relative to one who was normal. However, for females, the interviewee's history made no difference and instead judgments reflected the confederate's performance in the interview.

Research by Cupchik and Poulos (1984) also maintains this view concerning the genders' processing proclivities: While females tend to make fine discriminations that are based on both stimulus information and expectations, males render judgments that "easily fulfill their broadly defined expectations," (p. 438). Thus again, females are seen as more predisposed to using DDP than are males, who favor CDP.

The study that follows examines the conditions under which individuals are likely to use CD and DD strategies. Males and females were presented with a description of a new in-depth television news program that contained a majority of features consistent with those possessed by such existing programs. Three independent variables were introduced in the context of a between-subjects factorial design. These included two levels of gender, two levels of contextual positioning of the incongruent cues (unitized, discrete) and three levels of cue incongruity (low, moderate, high). Subjects' choice of processing strategy was detected by examining treatment differences in accurate recall of the stimulus information as well as the incidence of false intrusions that were congruent with schematic knowledge but had not appeared in the stimulus.

On the basis of the preceding analysis, the use of CD and DDP was expected to vary depending upon the treatment conditions. Males' proclivity toward the use of CDP implies that they will engage in DDP only when cue incongruity is readily detected, thereby motivating DDP. Such conditions should prevail when cue incongruity is moderate or high. Males might also engage in DDP when cue incongruity is low if these cues are discrete (i.e. nonsequential) in their positioning. This discrete positioning may sufficiently emphasize cue incongruity such that males are motivated to engage in more DD analysis. However, predictions differ for males exposed to the low incongruity cues that are unitized in their positioning (i.e. sequential pairing). Because the salience of cue incongruity is understated in this treatment, males are expected to resort to CDP. By contrast, females' general proclivity toward DDP suggests that they will employ a DD strategy regardless of variations in the content or the positioning of the

incongruent cues. Hence, females in all treatments are expected to engage in DDP.

Method

Subjects

Sixty-one males and 60 females, age 18 to 55, were recruited to participate in a new product study. Subjects were run in small groups and were screened such that they all watched 15 or more hours of television each week.

Stimulus

Subjects were randomly assigned different versions of booklets that contained the experimental materials. They were told that their reactions were sought to a new television program that might be introduced by a major network. No reference was made to the recall task later administered. Subjects then read a description of a proposed new half hour in-depth news program to be aired after the evening news. The description of this program closely resembled ABC's *Nightline* with Ted Koppel, a well known exemplar of the in-depth news program category. Information presented to subjects concerning the stimulus program's format and host was based on that of *Nightline*, rendering this stimulus information congruent with the in-depth news show category (e.g. the half hour in-depth news program would feature a well-known host who would moderate the discussion of various newsworthy topics and experts on featured issues would be presented).

Also included in the stimulus description were eight topical issues that were said to be scheduled for discussion on the show. Common to all stimulus descriptions were six issues that were found in pretests to be congruent with program content on in-depth news shows. These issues were: medical malpractice, United States presence in El Salvador, America's problem of drug infiltration, drug abuse, combating terrorism, and worldwide hunger. Also mentioned were two additional issues that varied in their degree of incongruity with the program category. Pretests indicated that these critical issues or cues were either of low ($M=4.61$), moderate ($M=6.22$), or high ($M=8.15$) incongruity (ratings were obtained on 11 point scales anchored as extremely consistent/inconsistent with items featured on in-depth news shows; higher numbers indicate greater incongruity). No gender differences were evident in these pretest ratings. The pairs of issues, which represented the critical incongruent stimulus cues, were "national weather forecasts" and "movie reviews" in the low incongruity condition, "healthful nutrition" and "organizing family finances" in the moderate incongruity condition, and "magic performances" and "poetry readings" in the high incongruity condition.

Another independent variable was the contextual positioning of the incongruent cues. Either the incongruent cues were unitized such that they were positioned together and presented consecutively in the stimulus description or they were discrete and positioned as two independent cues.

Dependent Measures

After reading the program description, subjects answered a series of questions concerning their general television viewing habits. These questions were included to limit short term memory effects.

Subjects then performed a recall task. They were asked to recall as accurately and completely as possible all statements presented in the stimulus material. No time limit was imposed. Finally, to determine subjects' familiarity with in-depth news shows such as the stimulus program, the frequency with which subjects watched *Nightline* was assessed because this was the show upon which the stimulus message was based.

Results and Discussion

Confounding Checks

To ascertain whether gender was confounded with familiarity of in-depth news programs, an ANOVA was performed on the frequency with which subjects watched *Nightline*, the in-depth news program most like the stimulus program. This analysis revealed that *Nightline* was watched frequently ($M=2.3$ times per week, $SD=1.61$) and both genders watched the program with equal frequency ($p<.94$). Hence, gender differences in familiarity with shows similar to the stimulus program can be ruled out as a causal explanation for treatment effects on the other dependent measures.

Recall

To assess treatment effects on recall, analyses of variance were performed on the 2 (gender) by 2 (positioning of incongruent cues: discrete or unitary) by 3 (cue incongruity: low, moderate, and high) factorial design. Two planned orthogonal contrasts were performed on the 3 levels of cue incongruity: a comparison of the low versus moderate incongruity cue conditions and a comparison of the low versus high incongruity cue conditions. Treatment effects involving these two contrasts tended to be the same because, as anticipated, effects obtained only within the low incongruity cue condition. However, effects involving the low versus moderate incongruity cue contrast were stronger than were those involving the low versus high incongruity cue contrast, perhaps because the main effect of the latter contrast dominated the interaction. Hence, in reporting the results, focus will center on the effects as they pertain to the low versus moderate incongruity cue contrast, though all effects will be reported.

Based on the logic presented earlier, it was anticipated that detection of subjects' processing strategy would be revealed by examining the total number of stimulus items accurately recalled and the number of false intrusions that were congruent with the in-depth news show category but did not appear in the stimulus. The use of DDP was expected to result in substantial recall of all stimulus items. Subjects adhering to this strategy should devote extra processing to the aberrant incongruent cues and, in an effort to explain them, relate these cues to the congruent stimulus items. Because detailed consideration would be afforded both types of stimulus cues, subjects' recall of these items should be high but the incidence of congruent false intrusions should be minimal. By contrast, the use of a CD strategy should produce a relative deficit in recall of stimulus items but a sizeable number of false intrusions. Subjects who use this strategy should filter out the modestly aberrant stimulus input, thereby obviating detailed consideration of the incongruent and congruent items. Instead, processing would center on rehearsal of preexisting knowledge that is consistent with the stimulus theme. Hence recall of all stimulus items should be poor but false intrusions should be substantial.

Using a gist criterion, separate measures were coded for the number of stimulus items recalled and the number of congruent false intrusions. These recall classifications were analyzed as a proportion of the total number of all items recalled. Treatment means for each of these measures are reported in Table 1.

Accurate recall of the stimulus items. An analysis on accurate recall of all stimulus items revealed a marginally significant main effect of the low versus high incongruity cue contrast ($F(1,108)=3.45, p<.06$) and a main effect of positioning of the incongruent cues ($F(1,108)=4.24, p<.04$). Accurate recall of the stimulus items was greater in the high than in the low incongruity cue condition. This finding is consistent with the notion that highly incongruent stimulus cues are more likely to prompt DDP as the processor attempts to understand the incongruent cues relative to other available stimulus items. Moreover, the main effect of cue positioning serves as a manipulation check, verifying that the unitized positioning of the incongruent cues diminished the salience of these cues relative to when they were discretely presented, thereby undermining stimulus recall. These effects were qualified by an interaction of gender by positioning of incongruent cues by the low versus moderate incongruity cue contrast ($F(1,108)=3.48, p<.05$). The analogous interaction involving the low versus high incongruity cue contrast approached significance ($F(1,108)=3.31, p<.07$). As was anticipated, these effects can be attributed to a gender by positioning of incongruent cues interaction that appeared in the low incongruity cue condition ($F(1,108)=4.94, p<.03$) but not in the moderate or high incongruity cue conditions ($F_s < 1.00$).

As can be seen in Table 1, in the low incongruity cue condition males evidenced lower recall of the stimulus items when the positioning of incongruent cues was unitized rather than discrete ($F(1,108)=8.92, p<.003$), while females manifested equivalent recall of congruent stimulus items across both incongruent cue positioning conditions ($F < 1$). Furthermore, males' recall of the stimulus items in the low incongruity cue condition was lower than was that of females when the positioning of incongruent cues was unitized ($F(1,108)=3.85, p<.05$), but not when incongruent cue positioning was discrete ($p > .22$).

Thus, consistent with predictions, when low incongruity cues were presented as a unitized mass, males' accurate recall of the stimulus information was impaired, implying that these males used CDP in apprehending stimulus material. Males in the remaining experimental conditions and females in all conditions exhibited substantial recall of the stimulus items, which suggests that they engaged in DD processing.

Recall of false intrusions. Analysis on recall of congruent false intrusions revealed an inverse patterns of

effects. A main effect of the low versus high incongruity cue contrast ($F(1,108)=8.51, p<.004$) suggested that recall of congruent false intrusions was greater in the low than in the high incongruity cue condition. This finding suggests that overall, message inclusion of high incongruity cues is more likely to stimulate DDP relative to inclusion of low incongruity cues, which may generate CDP.

The interaction of gender by positioning of incongruent cues by low versus moderate incongruity cue contrast approached significance ($p < .10$) as did the analogous interaction involving the low versus high incongruity cue contrast ($p < .12$). These interactions were explored further because predictions relevant to them were posited a priori. The interaction of gender by positioning of incongruent cues was marginally significant in the low incongruity cue condition ($F(1,108)=3.08, p < .08$) but not in the moderate or high incongruity cue conditions ($F_s < 1$).

As suggested by the means reported in Table 1, in the low incongruity cue condition males demonstrated greater recall of false intrusions when the positioning of incongruent cues was unitized rather than discrete ($F(1,108)=4.94, p < .03$), whereas females manifested a constant level of distorted recall across both cue positioning conditions ($F < 1$). Tests of the remaining simple effects failed to reach significance ($F_s < 1.14$).

Though effects observed on this measure are somewhat attenuated, they converge with recall of all stimulus items in the interpretation they imply. The observation that males exhibited substantial incidence of false intrusions in their recall when the low incongruity cues were unitized implies that males employed CDP in this treatment. Males' relatively low incidence of false intrusions in the remaining conditions and females' generally infrequent incidence of false intrusions in all conditions implies that these subjects engaged in DDP of the stimulus information.

General Discussion

The data from this study provides insight into when individuals use CD and DDP in apprehending message information. As existing research suggests, when individuals detect cue incongruity, they are likely to be motivated to engage in DDP. The observation that both genders exhibited substantial recall of the stimulus information and minimal incidence of false intrusions when the stimulus contained unambiguously (moderate and highly) incongruent cues implies that these subjects engaged in DDP. Apparently, detailed consideration was devoted to the stimulus cues in these conditions.

When detection of cue incongruity is undermined, however, CDP seems to be encouraged. The current study suggests that when cues are only modestly incongruent

Table 1
Treatment Means for Propositional Recall of All Stimulus Items and Congruent False Intrusions

	Low Incongruity		Moderate Incongruity		High Incongruity	
	Unitized	Discrete	Unitized	Discrete	Unitized	Discrete
Males:						
All Stimulus Items	.81	.95	.95	.95	.93	.98
Congruent False Intrusions	.13	.03	.04	.05	.00	.02
Females:						
All Stimulus Items	.92	.89	.86	.89	.89	.96
Congruent False Intrusions	.08	.10	.10	.10	.03	.03

and are positioned as single units, the cues' incongruous characteristics are more difficult to detect, thereby encouraging the use of CDP. And because males seem to possess a greater proclivity to engage in such processing than do females, this strategy was apparently used by males in this condition. This is implied by males' less accurate recall of the stimulus items and their elevated incidence of false intrusions. Such deficits were absent in females' recall, implying that females engaged in DDP. These deficits were also absent in the recall of both genders when low incongruity cues were rendered more salient due to their discrete positioning in the message. This implies that both genders detected the modestly incongruous cues when they were positioned as discrete entities and thus engaged in DDP.

Taken together, these findings imply that cue incongruity need be quite pronounced to motivate males to employ DDP. Thus, in designing ads targeted at males, marketers who wish to encourage detailed processing of the message may want to accentuate product features that represent a point of difference. As demonstrated in the present study, points of difference that are relatively subtle or modestly incongruent might be accentuated contextually by their positioning in the message. Other methods of emphasizing low incongruity cues might include the use of visual devices (e.g. color, bold typeface, etc.) that enhance cues' attention-getting properties. Embellishment of incongruous product features may be less necessary when targeting females. Because females seem to favor the use of DDP in general, they appear to pursue such processing even when messages contain only modestly incongruent items. Whether this implies that special measures might be necessary to induce females to employ CDP when incongruent features are absent is an issue that must await future investigation.

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Modality Effects in Television Advertising: A Methodology for Isolating Message Structure from Message Content Effects

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Abstract

Research on modality effects has rarely examined how processing of visual and verbal message components may be affected by the amount of meaning congruence between the pictures and the words used in an advertisement. Only by controlling for or manipulating message content can treatment effects be attributed to differences in modality. This paper describes a methodology for developing content redundant television ads. Findings from an experiment comparing a picture-only message with its verbal-only analog provide support for the "picture-superiority effect" on memory within the television medium. The findings are suggestive of the need for further research into the nature of modality synergies inherent in television advertising.

Introduction

Increased interest in modality research comes at a time when communication researchers, advertising practitioners and public policy makers are calling for more research on the relative importance and role of visual versus verbal message components in advertising (Alwitt & Mitchell, 1985; Liu, 1986; Schmalensee, 1983). Recent studies in this area have focused almost exclusively on the persuasive effects of written words and pictures as combined in print media and have produced inconclusive and controversial findings (Edell & Staelin, 1983; Kisielius & Sternthal, 1984; Mitchell & Olson, 1981). One problem that may have contributed to the inconsistent findings in previous research on modality effects is the failure to control for content differences between pictorial and verbal messages, i.e., the failure to separate message structure from message content effects.

The objective of this paper is to describe a methodology developed to construct meaning congruent or content redundant pictorial and verbal television ads. Using these commercial stimuli, findings from an experiment designed to examine the effects of modality on memory are then described.

Development of Content Redundant Pictorial and Verbal Messages

To isolate the effects of modality on message learning and persuasion, development of messages with meaning congruent content in each modality - audio and visual - was an important goal¹.

Only by controlling for message content can processing differences be attributed to differences in message modality. Content redundancy was operationalized based on subject ratings of the similarity of the information content in audio and visual messages, which required writing new audio copy and modifying the existing visuals. The methodology developed for accomplishing this was adapted from Edell & Staelin

(1983) and Baggett & Ehrenfeucht (1982). A six step procedure was used:

Step 1: Selection of Products/Commercials

To ensure, insofar as possible, that results were not due to the nature of the product category or brand, three brands from different product categories were used. The television commercials for these brands were obtained from existing film footage. Selection of the products/commercials was guided by the following criteria: (1) brands in categories for which the subject population (college students) would be potential members of the target audience and for which they would normally use information presented in the mass media in brand selection decisions; (2) brands unfamiliar to the subjects so that learning and persuasion measures would not be affected by prior brand knowledge/beliefs or by associative interference from prior media exposure; (3) commercials that would allow product information to be depicted both verbally and visually (e.g., no use of computer graphics or other "high tech" video devices, verbally reproducible visual scenes); and (4) commercials that used voice-over audio and few people, so that source credibility effects could be minimized.

Requests for commercials meeting these criteria were made to various packaged goods marketers and advertising agencies. In addition, commercials for products not available in the U.S. were obtained from Canadian television. From this pool of commercials were selected those that met the technical criteria of voice-over audio, few people, etc.. Subsequently, primary data were collected on the remaining set to determine which commercials met the other selection criteria. Data were also collected on the importance of various product attributes in selecting a brand within each category. It was desirable to use commercials that mentioned attributes/claims considered somewhat important by the target audience. Analysis of the data yielded four commercials that met all of the aforementioned criteria: Sauce'n Savour baking/barbeque sauce, Neo Citran cold medicine, Black Magic boxed candy and Catelli spaghetti sauce.

Step 2: Editing of Visual Messages

The four television commercials selected for further testing were initially edited to insert a package shot at both the beginning and end of each ad, to remove any supers (superimposed writing), and to eliminate the audio tracks. Storyboards, consisting of still photos/slides taken at approximately two second intervals throughout each thirty second commercial, were then developed. These storyboards illustrated the story line for each ad, capturing every cut or dissolve to a noticeably different frame.

Each commercial (video only) was then shown to a different subset of the prospective subject population, followed by the slide presentation representing sequential "snapshots" of the visual scenes depicted in the actual commercial. Approximately 50 subjects participated in each of the four presentations. Subjects were allowed to view each slide for three minutes, during which time they

¹ This paper does not examine the visual as opposed to aural presentation of verbal information. The terms *audio* and *visual* are used to refer to spoken words and pictures, respectively.

were asked to write down everything that was happening in each slide, including their interpretation of what the manufacturer was trying to tell them about the product.

It was felt that since later analyses would require collapsing responses across products/ads for each condition, any significant differences found among the four ads on such things as comprehensibility might obscure the effects of the modality manipulations. Several 5-point scales were therefore administered to measure subjects' subjective responses to the overall commercial (boring-interesting, attention getting-not attention getting, sad-funny, likeable-not likeable, confusing-not confusing). However, no attempt was made to control for differences on these variables since the focus of the research was on learning and persuasion differences across modality conditions (audio, visual), *within* each commercial.

A check on the validity of proceeding in this fashion was made using one-way analyses of variance and a posteriori contrasts (Tukey) to compare the four commercials on each of the attributes mentioned above.

Although all of the F values and some of the contrasts were found to be significant at at least the .05 level, the means indicate that these differences were not extreme, i.e., all of the means fell somewhere between 2.4 and 3.9 on a 5-point scale. In general, all four ads were perceived as somewhat interesting, attention-getting, likeable, and not very confusing.

The open-ended responses for each slide were coded and counted by a graduate student, resulting in a summary of the different messages conveyed per slide and the number of subjects who perceived each message. Those visual scenes from each commercial that conveyed too many messages or conveyed strikingly different messages to different individuals were then eliminated (if they did not interfere with message comprehension) or modified (if they illustrated important copy claims).

Step 3: Second Version of Visual Messages

The revised commercials and storyboards were then given to four additional groups of subjects of approximately twenty-five each. The instructions and procedure were identical to step 2 above, except that subjects were given the additional information/incentive that the manufacturer was interested in converting each television commercial to a radio commercial, while still communicating the same message to the audience.

Only one commercial (Black Magic) had to be altered at this stage (to eliminate a white rose dissolve that elicited multiple interpretations). It was also decided to eliminate the Catelli commercial at this point, because of its overall visual complexity and because the research called for only three commercials.

An analysis of the second set of responses to the semantic differential items indicated that there were now no important differences among ads on "attention-getting" and "likeability" (largest $F = 2.821$, $p < .05$). The remaining attributes showed very little change from step 2 above.

Step 4: Development of Redundant Copy

The verbal information obtained in step 2 and step 3 was then used to write a 30 second audio text for each commercial, on a slide by slide basis. The text attempted to faithfully incorporate not only the ideas expressed by subjects re each slide, but the language style and vocabulary as well. Unfortunately, the copy developed ran to 140-150 words per ad, while a typical

30 second commercial may have 90-110 words. At this point time compression of the audio was considered. However, a professional copywriter was able to take the audio copy that had been initially developed and not only reduce the number of words required to faithfully express the visual scenes, but add a professional and exciting touch to the copy as well.

The copy thus created for each ad was then recorded by professional radio announcers, a different voice being used for each of the three ads. Professional creative assistance was obtained to determine the type of voice required to match the mood conveyed by the video track of each ad, and to determine inflection, tonality, and voice speed. Five different takes were recorded for each ad. Selection of the "best" take for each ad was subjective, but made by a group of professional creatives.

Another group of subjects was then exposed to the audio and visual messages. Some subjects (40) received the 30 second audio version of each ad, and some (29) received the 30 second video version. All subjects were asked to indicate the major copy points being conveyed by the audio or visual messages. In addition, subjects were asked to rate each message on three 5-point scales for: ease of understanding, believability, and importance of product claims for making brand selection decisions. The latter scale consisted of four items, different for each commercial and representing those claims or product attributes that had been mentioned most frequently in responses to step 2 and step 3 above.

A Chi-squared test of homogeneity (Kruskal-Wallis One-Way ANOVA) was used to test for significant differences in the number of messages conveyed by each modality. No significant differences were found between modalities on this variable (largest Chi-squared = 1.09, $p = .30$). T-tests were used to test for differences in believability, ease of understanding and relative importance of attributes between audio and visual messages, within each ad. Again, no significant differences were found for ease of understanding (largest $t = 1.47$, $p < .10$), believability (largest $t = 1.84$, $p < .07$), or for any of the product attributes.

The number and content of different copy claims communicated by each modality, for each ad, was also examined. From 70-90% of all responses pertained to the top four claims. Very few differences in the number/content of copy claims mentioned were found between audio and visual messages for any of the ads [with the exception of the expected differences in messages conveyed by each modality - manufacturer's name and package/product size/color/shape, which were only mentioned in the audio or video tracks, respectively]. It was decided, therefore, to consider the top four claims made for each ad as the ones of primary importance, and these were used in subsequent analyses.

Step 5: Further Tests for Content Redundancy

As a final check on content redundancy, another group of subjects (28) received (*both*) the audio and visual tracks of the three commercials and were asked to rate the similarity of copy points conveyed by each modality. The four copy points/claims determined in step 4 above to be the most commonly mentioned in both modality conditions, for each ad, were tested for audio-visual similarity (1=very similar; 5=not at all similar). In addition, two claims that were made in (*only*) the audio (manufacturer's name) or video (package/product size/color) component of each ad were included to permit

a comparison between similar and dissimilar claims for each ad, and to check on subjects' understanding of the task.

A correlated t-test was performed to test for differences in similarity between the four attributes for each ad hypothesized to be perceived as similar across modalities and the two attributes hypothesized to be perceived as dissimilar across modalities. A correlated t-test was used because all data were within subject data. Two new summary variables were created for each ad, by computing the average of the means for the four "similar" variables and the average of the means for the two "dissimilar" variables. A one-tailed test was used because the alternative hypothesis (H1) states that the average of the means for the four similar variables should be less than that for the two dissimilar variables, given that 1=very similar and 5=not at all similar.

The H0 of no difference was rejected in each of the three tests for the three ads (smallest $t=3.855$, $p<.001$; see Table 1). Thus, one can conclude that those claims that were supposed to be perceived as highly similar across audio and visual messages were so perceived, and those that should have been perceived as highly dissimilar were also so perceived.

Table 1
Difference in Perceived Audio-Visual Similarity Between "Similar" and "Dissimilar" Attributes: Results of Correlated One-Tailed T-Test*

PRODUCT		ATTRIBUTE SIMILARITY	
		"SIMILAR"	"DISSIMILAR"
Neo Citran	Mean	2.55	4.11
	t(p)	-3.93	(.001)
Sauce'n Savour	Mean	1.90	3.84
	t(p)	-3.86	(.001)
Black Magic	Mean	1.60	3.96
	t(p)	-4.48	(.001)

* where 1 = very similar; 5 = not at all similar

At this point, the Neo Citran ad remained somewhat problematic. It appeared, upon questioning some of the subjects, that the claim "available in two formulas" did not come across clearly in the visual message, while the claim "effective against all cold symptoms" was not clearly communicated in the audio message. Further editing of the audio and visual components of this ad was done in order to correct these problems. Additional data on perceived similarity of claims across modalities was then collected and analyzed. These results indicated that the audio and visual messages for the Neo Citran commercial were now perceived as highly redundant.

Step 6: Final Version of Audio and Visual Messages

Lastly, it was necessary to further edit the audio and visual messages so that in the combined audio-visual condition (included in a second study not reported here) the timing of the audio statements and visual scenes coincided. This required manipulating the visual message primarily, shortening and lengthening some scenes so that the words being said corresponded to the visual

scenes being illustrated (e.g., when "Black Magic" was heard, a package shot with the written name was seen).

The general tone of the finished commercials was favorable to the products, simply stated/depicted, and presented factual information to provide claims for subjects to recall/recognize. Certain message elements remained the same in all treatment conditions, across all commercials: (1) the manufacturer's name was mentioned in the audio component of the ad, once in the first five seconds and again in the last five seconds; (2) the package shot, with the brand name, was shown in the visual component of the ad - once each at the beginning and closing of the ad, and several times in the middle; and (3) temporal position of the brand name mentions coincided with that of the visual package/brand name shots.

The audio and video tracks for each commercial (three) were taped separately, so that subjects could be exposed to each modality alone. Each message was thirty seconds in length. Rate of presentation was similar to that of typical television commercials: 3-4 words/second and 30 frames/second for each commercial. Appropriate background music was selected for each ad, and was included in both audio and visual modality conditions. This was necessary so that in those experimental conditions conveying only visual information there would be some accompanying sound. The music selected was instrumental, and included three versions of the same melody, identical except for the instruments used and the beat (slow/moderate).

Empirical Findings: Pictures versus Words

The content redundant audio and visual messages created in this manner were used to examine modality effects on memory. A consistent finding in the literature is the "picture superiority effect", the ability of pictures to be remembered more easily and for a greater length of time than their verbal counterparts (Childers & Houston, 1984; Shepard, 1967; Paivio, 1971). However, few studies have applied these findings to advertising messages; fewer still have examined picture-word differences on memory within the television medium.

Experimental Design and Methodology

The experiment reported here attempted to confirm the picture superiority effect with television commercial stimuli that contain complex, dynamic pictures and words. It compared single channel visual-only messages with content redundant audio-only messages on measures of learning and ad/brand evaluation. Subjects (college students at Washington State University) in each modality treatment condition were exposed to three experimental ads for different products (at three levels of repetition). The ads were embedded in twenty minutes of program material and a cover story was used to induce a "low involvement" message processing strategy.

Measures

The recognition measure used was the sum of six two-alternative forced choice recognition questions. The brand name recognition question was identical in both audio and visual conditions. The other five questions were either administered aurally on tape (audio condition) or visually as a slide presentation (visual condition). The recall measure consisted of an aided, sequential recall task for brand name and copy claims, given the product category name. Those in the visual condition were also asked to draw the packages and indicate package colors,

while those in the audio condition were asked to recall the manufacturer's name for each brand. Recall was scored as the total number of message items correctly recalled.

Results

To test the hypothesis, analyses of variance for each product were conducted with Message Modality as the independent factor².

The results of the analyses of variance are presented in Table 2, along with the means for each Modality condition by commercial seen or heard. Recognition and recall scores were significantly higher for the visual messages than for their verbal counterparts. These findings provide support for the hypothesis tested.

Table 2
Means and Analysis of Variance Results for the Effects of Message Channel on Recognition and Recall

Message Channel		Recognition		Recall	
		AUDIO	VISUAL	AUDIO	VISUAL
Product 1 (Neo Citran)	Mean	4.39	4.66	1.58	5.14
	F	.69		39.89	
	p	.41		<.01	
Product 2 (Sauce'n Savour)	Mean	3.29	4.86	1.69	3.91
	F	44.68		24.05	
	p	<.01		<.01	
Product 3 (Black Magic)	Mean	4.27	5.17	2.19	4.38
	F	29.27		28.86	
	p	<.01		<.01	

Conclusions

Previous research on modality effects has rarely examined how processing of visual and verbal message components may be affected by the amount of meaning congruence or content redundancy between the pictures and words, although a cursory content analysis of current television executions indicates that there is considerable variation in the amount of content overlap present in audio and visual message components. This suggests that there may be synergies created when meaning overlap is present across modes. However, modality research has not systematically investigated these synergies but has been characterized by either a failure to control for content differences between pictures and words, or superficial attempts to ensure some degree of picture-word meaning congruence.

A more fruitful approach to this issue may be to consider audio-visual content redundancy as a theoretically important mediator of modality effects in its own right. This might be approached by (1) controlling for content differences by creating content redundant audio and visual messages, or (2) manipulating content redundancy as an independent factor in studies with dual channel, audio-visual messages. This paper described a methodology developed to achieve (1) above, and reported findings confirming the existence of a "picture superiority effect" on memory with television commercials. Modality researchers should also consider

manipulating content redundancy so as to determine how learning and persuasion are affected by the amount of congruence between audio and visual message components.

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² While other independent factors were included in this experiment (e.g., exposure-test delay, repetition), findings regarding each of these factors and their interaction with modality are not discussed in this paper.

The Affective and Cognitive Dimensions of Pictures in Advertising: An Extension of Mitchell & Olson

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Abstract

Research by Mitchell and Olson (1981) was reviewed to develop an experiment examining the effect of pictorial and verbal information on product attitudes. Subjects were exposed to six ads. Four were pictures of animals representing different levels of likableness and softness and two were different verbal claims of softness. Beliefs about and attitudes toward the product and attitudes toward the ad were assessed. The results differ from Mitchell and Olson in that the pictorial ads did not yield more favorable attitudes than the verbal ads and the attitude toward the ad measure was not a consistently useful predictor of brand attitudes.

Introduction

Although originally directed at exploring the Fishbein model's specification that attitudes are mediated solely by attribute beliefs, Mitchell and Olson's (1981) article also raised the interesting question of how similar information presented visually or verbally may affect information processing. Specifically, they found that consumers evaluated brands of facial tissue differently depending on whether the brand was associated with one of three pictures or the word "soft." Further, the different evaluations of the brands could not be explained by cognitive beliefs on five attributes including softness that were assessed. Hence, Mitchell and Olson concluded that advertisements could alter attitudes in ways other than by belief changes and that much of these influences could be measured as an attitude toward the advertisement. This important conclusion helped launch the investigation of attitudes toward an advertisement as an important determinant of attitudes toward the advertised product (cf., Gardner, 1985 for a review). It also was instrumental in starting a stream of research examining the relative persuasive powers of pictures and words (cf. Kisielius & Sternthal, 1986 for a review).

The purpose of this paper is to reexamine the attitude toward the advertisement and attitude toward the advertised product relationship by reviewing Mitchell and Olson's study and identifying limitations inherent in their design. On the basis of this review, three major issues are identified which we feel limit generalization of their conclusion regarding A_{ad} and $A_{product}$. Next, a revised procedure is suggested to address these limitations. An experiment incorporating these changes is presented and the results are summarized. Finally, issues for future research on the relationship between attitude toward the ad and attitude toward the advertised product are offered.

Before beginning, we would like to express our admiration and appreciation of Mitchell and Olson's insight in developing a revolutionary view of attitude change and a clever research design. However, all research can be improved and this may contribute to our understanding of the phenomenon investigated (see Mitchell, 1984 for another extension of Mitchell and Olson, 1981). To this end we reviewed and modified Mitchell and Olson's work much as they sought to extend Fishbein's attitude theory (p. 320).

Mitchell & Olson's Study

Mitchell & Olson were interested in whether two advertising message factors, amount of repetition (none versus some) and mode of presentation (verbal versus pictorial) might result in different attitudes toward a product without noticeable differences in beliefs toward the advertised product. Using a within subjects research design, each subject was exposed to four ad treatments. These included a photograph of a kitten, a photograph of a sunset, a card with an explicit verbal claim of softness and a picture of an abstract painting. Each message was associated with a different brand of facial tissue, identified by the letters I, J, L, and R. Effects of the message were assessed using Ahtola's (1975) vector model. Accordingly, beliefs about the brands on various levels of five attributes (softness, strength, attractiveness, economy and color), and each subject's evaluation of several levels of each attribute on a good-bad scale were determined. Attitudes toward each advertisement and each picture were also assessed.

Mitchell and Olson analyzed their data using a one-way ANOVA, which assumes that the four ads differed in many ways. However, their hypotheses and interpretations suggest that their design could be conceptually construed as a 2x2 factorial, which allows a separation of the cognitive aspects of the advertising stimuli from the affective. As shown in Table 1, the picture of the abstract painting represents a control group in that it should not communicate that the facial tissue is soft and should not stimulate positive emotions. On the other hand, the advertisement with the word soft on it should communicate that the tissue is soft but also without stimulating positive emotions. The picture of the sunset was expected to stimulate positive emotions but without the association of softness. Finally, the picture of the kitten might be expected to communicate softness as well as to stimulate positive emotions. As discussed later, there are some problems with the experimental manipulations when viewed in this manner but we think that it clarifies their study as well as introduce the extensions discussed in this paper.

The results of their analysis revealed that there were no significant effects attributable to message

Table 1
Mitchell and Olson's Experimental Design

		Emotional Information	
		Low	High
Cognitive Information	Low	Abstract Picture	Sunset Picture
	High	Word soft	Kitten Picture

repetition but there were differences in response across the four advertisements. The brand associated with the picture of the kitten was more positively evaluated than the brand paired with the word soft. Secondly, although the verbal claim of softness created significantly stronger beliefs about the softness of the tissue relative to an abstract painting, the verbal claim ad did not result in more favorable attitudes than the abstract painting. Finally, the verbal message did not result in significantly stronger beliefs about softness than the picture of the sunset and attitudes were less favorable toward the brand associated with the verbal message than for the one associated with the picture of the sunset.

On the basis of these results and other analyses, Mitchell and Olson concluded that an attitude change without belief change had been demonstrated. The most convincing evidence they cited involved the more favorable attitudes toward the product in response to the picture of the sunset compared to the verbal claim of softness. As shown in table 1, this supposedly compares cognitive information without emotional information with emotional information without cognitive information. The attitude change without belief change was further verified using regression analysis in which there was a significant effect of attitude toward the ad on attitudes toward the advertised product beyond the beliefs and evaluation of beliefs component as specified in Fishbein's model (Mitchell and Olson, 1981, p. 326).

Limitations of Mitchell & Olson

Demand Effects

All subjects were exposed to all four treatments before belief measures and attitude ratings were obtained. This creates the possibility of demand effects and treatment interactions. That is, subjects may have determined the nature of the experiment, guessed the hypotheses, and altered their behavior in some way. Further, seeing a picture of a kitten after a picture of a sunset may sensitized subjects to the many dimensions on which they differ. To their credit, Mitchell and Olson conducted tests for these effects. A test for demand character had each subject write his/her perception of the purpose of the study and it showed no problems. A similar conclusion was reached after comparing groups varying in the order of presentation of the verbal claim and kitten ads. However, these do not rule out problems that might occur without a subject's awareness or other treatment interactions. A between subjects design virtually eliminates this concern.

Difficulty in Altering Affect without Changing Beliefs

Mitchell and Olson expected that both the picture of the kitten and the verbal claim of softness would alter the subjects' beliefs about the tissue's softness. Therefore, any attitudinal differences between these two conditions could be attributed to affectual differences resulting from liking of the kitten. Further, they expected the picture of the sunset to communicate only emotional information and not alter the subjects' beliefs about the product. These expectations were not entirely met. The results of the analysis of the beliefs revealed that beliefs about softness were significantly higher in the verbal claim condition than in the abstract painting condition. However, they were not significantly higher than in the sunset picture condition and actually significantly lower than in the kitten picture condition.

Further, beliefs about the attractiveness of the colors of the tissue were significantly higher in the sunset picture condition compared to the verbal claim condition. Thus, the efforts to alter beliefs without altering emotions and to alter emotions without altering beliefs were not successful.

In their article, Mitchell and Olson acknowledge that the claim of "very soft" as opposed to "soft" would be more equivalent to the softness associated with a kitten and probably create a significantly higher softness belief than that resulting from the sunset picture ad. Further, analyzing their data using a two-way ANOVA would have provided a direct test of the relative influence of cognitive and emotional information.

Belief-Affect Confounded with Verbal-Visual

As mentioned in the introduction, another contribution of Mitchell & Olson was the demonstration that pictorial information might have more impact than an equivalent verbal message. Evidence relevant to this comes from the comparison of the verbal claim of softness for one brand of facial tissue with the association of a picture of a kitten with another brand. The latter resulted in more positive beliefs about the softness of the tissue. However, this conclusion came about because the design involved manipulations of verbal and visual information as well as affect and belief oriented messages. Thus, the critical comparison of the affect only (sunset picture) with the belief only message (verbal claim of softness) actually involves two differences. One is the desired difference in being oriented toward changing beliefs or changing feelings. However, another is that one message is pictorial and the other is verbal. Because of this, observed differences may be attributed to the differences in belief-affect orientation or to the verbal-visual presentation difference. As both differences are of interest, it would be desirable independently to manipulate both.

Research Purpose

The discussion of Mitchell and Olson has identified three limitations of the research. One concern was that the belief-oriented ad (verbal claim of softness without positive affect) was not effective in altering subjects' beliefs about the brands' level of softness. To address this problem, verbal messages were developed that were equivalent to the kitten picture. One stated directly that the brand was very soft and the other did this in a more vivid manner by claiming that the brand was as soft as a kitten.

Another concern is that Mitchell and Olson's design mixed picture-word differences with affect-belief differences. This was addressed by having four ad stimuli involving pictures varying in their ability to communicate the softness of the tissue and to stimulate liking of the brand. Further, the three picture conditions used by Mitchell & Olson involved vastly different stimuli (kitten, sunset and abstract painting), which appeared to result in a variety of unwanted belief inferences (for example, the attractive color belief resulting from associating a brand with a sunset). Only pictures of animals were used to minimize belief inferences on other dimensions.

Finally, in order to alleviate a lingering concern with within subjects designs involving manipulations that can interact with each other (seeing a verbal claim of softness before seeing a picture of a kitten), the extension used a between subjects design.

Procedure

Six different conditions were employed in a between subjects experimental extension of Mitchell & Olson's study. Four used pictures of animals associated with a brand of facial tissue and two had verbal messages. The four animals represented the two dimensions of softness and likableness as illustrated in Table 2. The two verbal messages used the words "very soft" (corresponding to Mitchell & Olson's suggestion that this was more equivalent to the picture of a kitten than the claim of soft) or the words, "soft as a kitten." The latter was thought to create a verbal equivalent of pictorial information contained in the kitten picture ad and thereby provide a better test of the communication effectiveness of verbal versus visual information. Eight different classes of students were used as subjects. Each class was split into two groups and assigned to different rooms. Once the experiment started, the subjects were exposed to a slide containing the advertisement (picture or words, a name card with the word "Breeze tissue" on it, and a picture of an unbranded box of tissues). After an exposure period of about ten seconds, the subjects were asked to complete a questionnaire. Upon completion, they were debriefed and excused from the session. To protect against demand effects, all subjects were told that they were participating in a brand name recall experiment. The directions for the questionnaire indicated that the project involved brand name recall and that different subject groups would be exposed to various treatment groups.

Table 2
Experimental Design for
Picture Conditions

		Likableness	
		Low	High
Softness	Low	Rhino Picture	Whale Picture
	High	Tarantula Picture	Kitten Picture

Measures

The instrument used in this study was composed of nine separate measurement sections. The first section consisted of simple demographic and informational questions not pertinent to the study. The second section gathered product attitudes using four semantic differential questions (good - bad, dislike very much - like very much, pleasant - unpleasant, and poor quality - good quality). Section 3 had a set of nine product characteristic importance questions (e.g., It is important to me that this product be as soft as possible). The fourth section contained six bipolar scales for evaluating the advertisement (good - bad, irritating - not irritating, like - dislike, not interesting - interesting, pleasant - unpleasant, awful - nice). The fifth section had fourteen questions concerning beliefs about the brand (e.g., This brand is probably softer than the average brand). Section six was composed of two separate parts; three questions about attitude toward purchasing the brand and

one question reflecting an intention to buy the brand. Section seven consisted of a battery of questions on beliefs about the softness and likableness of the various animals used in the different ads and served as a manipulation check. The eighth section gathered responses pertaining to the cover issue of brand name recall and section nine provided open ended questions testing for demand artifacts.

Results

A manipulation check was done using the subjects' evaluation of a list of four animals on two dimensions, softness and likableness, using bipolar adjectives like soft/hard, dislikable/likable, furry/rough, and friendly/unfriendly. Subjects in the verbal conditions evaluated the four animals used in the experiment. Subjects in the pictorial conditions evaluated the three animals used in the other ads and a tiger as a substitute for the animal used in their ad.

Table 3
Evaluations of Different Animals

Animal	Softness	Likableness
Kitten	6.8	6.3
Whale	3.1	4.4
Tarantula	5.1	2.1
Rhino	1.5	2.8
Tiger	5.3	3.5

As seen in table 3, the perceptions of the animals corresponded to the dimensions that they were supposed to represent. The kitten was perceived as soft and likable, the whale as not soft and somewhat likable, the tarantula as soft but not likable, and the rhino as not soft and not likable. From these results, one might assume that the slides produced the reactions intended. However, we found that the ratings of the verbal concept of an animal did not correspond to perceptions of a brand associated with a picture of the animal. This was particularly true of the whale as will be discussed later.

Table 4 shows the different responses to the 14 belief statements by type of ad stimulus. The relevant individual beliefs were combined into five scales (for example, softness consisted of softer than average, soft enough for a baby, and soft enough to be used frequently for a cold). Only beliefs about softness were significantly affected by the association of the brands with an advertisement. A oneway ANOVA of these responses revealed a significant difference between the two verbal advertisements and all four pictorial advertisements. Thus, as suggested by Mitchell and Olson, the change from the description of the tissue as soft to "very soft" and as suggested by us, to "soft as a kitten," substantially increases perceptions that the tissue is soft. However, contrary to expectations, there were no significant differences in the overall softness belief measure among the four pictorial groups.

Next, the effect of the manipulations on attitudes toward the product were analyzed. This was done in several ways. First, following the design illustrated in table 2, a two-way ANOVA was run using the dimensions of softness and likableness as operationalized by the pictures of four different animals. The results revealed main effects of likeness ($F = 28.0, p < .001$) and softness ($F = 7.1, p < .01$) but an insignificant

interaction. However, the differences were not as expected. Although the brands associated with the more likable animals (kitten and whale) were evaluated more favorably than those associated with the less likable animals (rhino and tarantula), the brands associated with the softer animals (kitten and tarantula) were evaluated less favorably than those associated with the less soft animals (rhino and whale). These results can be attributed to a highly favorable reaction to the whale ad. Based on Mitchell and Olson's results and the evaluations of different animals (see table 3), it had been expected that the kitten ad would be the most effective.

Second, a comparison was made of attitudes toward the product in response to the visual and verbal ads (see table 4 for the means). This was done by running a oneway ANOVA using the two verbal ads and the four ads with pictures. The results revealed differences only between the two verbal claim ads and the ad with a picture of a tarantula. The same result occurred when attitude toward the act of purchasing the brand of tissue was the dependent measure. These results differ from Mitchell and Olson's finding that an affect-oriented ad (picture of sunset) was more effective in altering attitudes toward a brand than a belief-oriented verbal claim ad. In this study, even the most liked picture (whale) did not result in more favorable attitudes toward the product than the verbal claim ads.

The final stage in the data analysis was to examine the mediating role of beliefs. According to Mitchell and Olson, a failure of beliefs to mediate the influence of attitudes toward the ad in a regression analysis of attitude toward the brand as a function of beliefs about the brand demonstrates that there is a noncognitive influence of advertising on consumers' attitudes toward products.

The first part of the regression analysis involved a series of regressions with attitudes toward the product as the dependent measures and the subjects' beliefs about the brand of facial tissue on the attributes of softness, color, absorbency, toughness, and economy. Regressions were run with all treatment groups and separately for those exposed to ads with pictures and those to the verbal only ads. They were also run using the belief scores alone and the belief scores weighted by the importance ratings. For all cases, softness was a significant determinant of attitudes toward the product. Among the other beliefs, only beliefs about color was significant and only for the groups exposed to the pictorial ads ($t = 2.00$ for the difference in the regression coefficient for the pictorial groups compared to the verbal groups). This finding corroborates Mitchell & Olson's finding that color beliefs may be affected by pictures relative to words.

Additional analyses comparing various formulations of the beliefs and their importance weights did not improve upon the basic finding that softness and color were the only measured beliefs influencing attitudes toward the product. Therefore, the remaining analyses used only these two beliefs as the measures of the mediating effect of beliefs on the effect of the advertisements. These analyses were done on a group by group basis and are reported in table 5.

The results generally support Mitchell and Olson's findings that attitudes toward the advertisement do affect attitudes toward the advertised brand in a way not measured by the beliefs about the brand. The only condition where attitudes toward the advertisement did not have a significant effect on attitudes toward the product in a way not mediated by beliefs was in reaction to the picture of the whale.

Table 4
Beliefs and Attitudes by Ad Stimuli

beliefs and attitudes	whale slide	rhino slide	kitten slide	tarantula slide	v. soft slide	soft as slide	F-test
softer than average	3.8[b][c]	3.5[c]	3.9[b][c]	3.5[c]	4.6[a]	4.4[a][b]	0.001
soft enough for a baby	4	3.9	4.4	4.1	4.3	4.6	ns
soft for a cold	4.8[a][b]	4.3[a][b]	4.2[a][b]	4.1[b]	4.8[a][b]	5.1[a]	0.01
tough for traditional uses	4.4	4.9	4.4	4.6	4.5	4.4	ns
not as tough *	4.2	4.6	4	4.3	4.3	3.8	0.08
more rugged than average	3.6[a][b]	4.2[a]	3.4[b]	3.8[a][b]	3.4[b]	3.4[a][b]	0.03
less absorbent than average *	4.1	4.1	4	4.2	4.4	3.9	ns
as absorbent as needed	4.9	4.6	4.4	4.7	4.9	4.8	ns
very expensive	4.6	5.1	4.6	5.1	4.6	4.7	ns
within usual price range	5.1	4.9	5.2	5.1	4.8	5.2	ns
much cheaper *	3.6	3.8	4	3.9	3.6	3.7	ns
very attractive colors	4.3	3.6	4.3	3.8	4.5	4.2	0.08
usable color	5.2	4.6	5.2	5	5	5	ns
less colors than average *	4.2	3.7	4.1	3.6	4.2	4.2	ns
attitude toward product	3.4[a]	2.9[b]	3.2[a][b]	2.5	3.3[a][b]	3.2[a][b]	0.0001
attitude toward ad	4.8[a]	3.7[b]	4.3[a][b]	2.8	4.6[a]	4.2[a][b]	0.0001

Note: Means with different superscripts are significantly different from each other using a student newman-keuls test ($p < .05$).

* the responses have been rescored such that high numbers represent positive evaluations.

Discussion

This study extends Mitchell and Olson's (1981) research in several ways. First, by changing from a within subjects to a between subjects design, attitudinal effects attributable to different ads were smaller. This is likely to be true because the sequential presentation of various ads causes subjects to note many attribute differences because of differences with the other ads which would be ignored in a single presentation. We think that this was most true in reactions to the picture of the kitten. It did not result in particularly high evaluations of the brand of facial tissue as being soft even though relative to four other animals, the kitten concept was rated as softest. Thus, although Greenwald (1976) has argued persuasively for within subjects designs, we still worry that they tend to cause type one errors in a world already oriented toward rejecting the null hypothesis (see Greenwald 1975).

Our second issue was the effect of affect and belief manipulations on attitudes toward the brand. We feel that we were only partially successful here. Although the concepts of the four animals differed substantially on these two dimensions, product beliefs and attitudes resulting from an association of a brand with a picture of a particular animal did not work as expected. Specifically, a very favorable reaction to the brand of tissue associated with the whale resulted in a reversal of the expected softness effect (animals considered to be less soft resulted in more positively evaluated brands). Further, even though a kitten was clearly considered to be the most soft of the animals used, the brand of tissue associated with a picture of a kitten was not rated as more soft than brands associated with the other animals.

The third issue dealt with the effects of verbal and visual information. Here, our results differ from Mitchell & Olson. First, by using words like very soft and soft as a kitten as opposed to "soft," we were able to cause subjects to rate the brand of tissue as being softer compared to when it was associated with a picture of a soft animal. As a result, with the exception of the whale ad condition, attitudes toward the brand were most positive in the two verbal conditions. Clearly, a "picture superiority effect" was not evident in our research.

Future Research

What can we say about attitude toward the ad as an influence on attitudes toward the product in a way not mediated by beliefs? Although we did not consistently find an independent effect of attitudes toward the ad, it was a significant predictor in most cases and other research has tended to support the existence and importance of attitude toward the ad (Gardner, 1985). The remaining issue is how does it occur? Much has been written about below awareness processing of emotional information and this seems to be a feasible phenomenon. Alternatively, reactions to the animals paired with the brand may become associated with the product through the cognitive association of the two. In this way, feelings toward kittens become associated with the brand especially when they constitute the only information about the brand. That is, if one thinks that kittens are playful, playfulness might then become an attribute of any product associated with kittens.

Table 5
Prediction of Attitudes Toward the Product Using Attitudes toward the Advertisement and Beliefs

	whale slide	rhino slide	kitten slide	taran- tula slide	v. soft slide	soft as slide
beliefsoft	.052**	0.018	0.02	.032**	.024*	0.024
beliefcolor	-0.013	0.004	0.003	-0.01	-0.011	-0.008
attad	0.101	.360***	.303***	.294***	.435***	.259*
r-square	0.41	0.48	0.53	0.46	0.63	0.33

* $p < .10$

** $p < .05$

*** $p < .01$

It is possible that what Mitchell and Olson and other researchers on attitudes toward the ad have discovered is the brand image. Currently popular with advertising agencies using names like brand personality and brand character, these appear to affect consumers' evaluation of products, especially fungible ones. Thus, the facial tissues associated with the pictures of kittens, whales, tarantulas and rhinos are similar to products associated with Green Giant, Charlie the Tuna, the Keebler Elves and the Pillsbury Doughboy. Attitude toward the ad research could be integrated with brand image research. Further, attitude measurement may need to be modified to include the image as well as the physical attributes.

It is interesting to note that the response to the whale ad, which was the most affect-oriented and the least belief-oriented, showed that attitudes toward the advertisement did not have a significant influence on attitudes toward the product when beliefs about the brand's softness were included in the regression analysis. This is a surprising finding in that the whale picture generated the most positive feelings toward the brand and toward the advertisement. Further, the picture of the whale was not expected to influence beliefs about the softness of the tissue. However, it seemed that many beliefs became more positive in response to the whale ad, demonstrating a "halo effect." Under such circumstances, attitude toward the ad becomes a redundant predictor of attitude toward the product.

Although acceptance of attitude toward the ad as an independent determinant of attitude toward the product has been near universal as evidenced by frequent ACR conference sessions on the topic and consumer behavior textbook treatment of the issue of low involvement communication, our research has shown that this relationship is complex and still deserving investigation.

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Processing by Attribute Versus Brand: The Mediating Role of Imagery

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Abstract

Past studies on consumer choice have revealed two major information processing strategies. In some cases consumers process information on one attribute at a time (Russo and Doshier 1983). According to this strategy, consumers select an attribute and examine values for several brands on that attribute. They then select another attribute and examine several brands on that attribute, and so forth. The other strategy involves processing information on one brand at a time. According to this approach, consumers separately evaluate each brand on the attributes presented. Although several modifications of these two processing approaches have been identified, processing by brand and processing by attribute represent the main strategies (Bettman & Kakkar 1977).

Findings in the literature suggest that whether a person processes by attribute or by brand is dependent on information presentation format (Bettman and Kakkar 1977), the number of attributes or brands considered (Wright 1975), prior experience and the learning goals of the consumer (Bettman and Kakkar 1977). This paper suggests another factor that may affect processing strategy selection. Specifically, instructions to imagine owning and using the brands prior to choice versus to avoid imagery and use logic were posited to determine choice of information processing strategy.

In the past decade, considerable interest has developed in the role of mental imagery in consumer information processing (cf. MacInnis and Price 1977 for a review). Imagery research to date has focused primarily on the effects of mental imagery at low levels of cognitive elaboration, for example, mentally picturing a stimulus object. The effects of mental imagery at higher levels of cognitive elaboration, for example, imagining owning and using a product, have received less attention from consumer behavior researchers.

While it has been suggested that elaborated imagery processing may affect several aspects of consumer choice including brand evaluation strategy and post choice enjoyment, there is no empirical evidence to support these claims (MacInnis & Price 1987). The goal of this study is to provide empirical support for propositions on the relationship between elaborated imagery and consumers' choice processes.

In this paper, we examine differences in strategy selection across conditions that either encourage or discourage subjects from using imagery. Specifically, subjects are instructed either to imagine owning and using alternatives or to avoid the use of imagery and to use logic to evaluate alternatives. The plan of the paper is as follows. First we review the research on imagery and brand evaluation strategies. We then present the rationale for the differential effects of imagery instructions on subjects' choice of processing strategy, amount of information searched per alternative, pattern of information search per alternative and subjects' assessed likelihood that they would enjoy owning and using the alternative selected. Hypotheses about the effects of imagery instructions are then tested experimentally. The paper concludes with a discussion

of practical implications on how imagery may determine brand choice.

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Figurative Language in Services Advertising: The Nature and Uses of Imagery

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Abstract

Language in services advertising is analyzed in terms of literary conventions of imagery and figures of speech. Flow chart of figurative continuum is presented. Figures such as simile, metaphor, symbol, allegory, and personification are defined with examples and textual analysis of ads. Special needs for services advertising to tangibilize the intangible offering, make a complex product clear to the consumer, and differentiate one brand from another are shown to relate to figurative language use. Propositions for effective use of language in services messages are developed, and further research areas suggested.

Introduction

Both advertising and poetry are consciously created literary structures which affect the perceiver through the condensed use of evocative language. Advertising tries to "breathe life into some otherwise inanimate object" (Durgee 1986/7, p. 57), just as poetry seeks to create vivid dramatic experiences for the perceiver (Brooks and Warren 1960). The "poetry of commerce" (Rimer 1987) is a particularly important concept for services advertising, thought to show special needs for creative imagery to tangibilize essentially intangible offerings (see George and Berry 1981; Shostack 1977). Since services are generally viewed as different from goods on the dimension of abstraction, it has been suggested that the function of services advertising is to make the offering "'known' by the tangible clues, the tangible evidence, that surround it" (Shostack 1977, p. 76). The use of imagery in figurative expressions thus appears to carry a heavier burden in conveying the essence of a service than a good. Creative language can be used to endow the abstract service with "sense appeal," and an analysis of figures of speech can help advertisers determine which kinds will most effectively reach consumers.

Language and other symbolic structures have been studied in consumer behavior in terms of consumption as a set of symbolic activities (Hirschman and Holbrook 1982; Holbrook and Hirschman 1982), and in advertising in terms of information processing (MacInnis and Price 1987) and emotional effects (Friestad and Thorson 1986; Hill and Mazis 1986). Advertising language itself has been studied in a psycholinguistic (Harris et al. 1986) and semiotic context (Cleveland 1986), to arrive at the nature of message meaning (see Levy 1986; Olson 1986). For the most part, however, these studies deal with tangible and socially visible goods rather than services, and do not consider language *per se* as a literary construct.

This paper proposes an alternative way of examining figurative language: the use of literary theory to investigate textual messages in services ads. It will investigate advertising language in light of the poetic tradition in three ways. First, a catalogue of poetic figures of speech available to creators of advertising will be explored. This discussion of the nature and uses of figurative language is based on poetic theory, which provides a typology of terms useful to describe verbal elements in advertising. Next, the special qualities of

services advertising which require precise uses of these figures will be considered. Last, a series of propositions concerning effects of figurative language in services advertising will be developed, and suggestions made for operationalization in future research.

Figurative Language: Background

Literary theory is based on the assumption that all language is fundamentally symbolic: the individual word "is the symbol, first and foremost...of a 'concept,' in other words, of a convenient capsule of thought that embraces thousands of distinct experiences and that is ready to take in thousands more" (Sapir 1949, p.13). Words can be used denotatively, in a scientifically literal sense, or connotatively, in terms of implied meanings and associations. Modern advertising relies on connotative usage: its language "works by allusion, free association, suggestion, and analogy rather than by literal and logical rule" (Leiss, Kline, and Jhalley 1986, p. 239). Advertisers harness the connotative power of words to create positive consumer experiences, within the confines of what is legally permissible.

Despite legal constraints mandating scientifically accurate denotative usage in many situations, advertisers have room for the kinds of creative expression considered within the boundaries of literary theory. Poesy deals with non-literal connotative language based on imagery woven into figures of speech. Imagery is defined as any use of sensorily appealing words: it is "the representation in poetry of any sense experience" (Brooks and Warren 1960, p.555). For example, the island of Bermuda could be described with scientific literality by noting its latitude, longitude, land and water mass, flora and fauna, and so forth. But an advertisement for Bermuda (see Figure 1) describes "the gentle, hidden bay" by using imagery which is visual ("hidden") and tactile ("gentle"); the descriptor "patch of sea" adds aural and additional tactile imagery as well. The sensual connotations of imagery are raw materials for dramatizing product attributes and benefits in advertisements.

Figure 1
Bermuda Department of Tourism Advertisement

Headline: BERMUDA IS YOU. ISN'T IT?

Text: "Not everyone was meant to know her secrets.

This is the gentle hidden bay you've searched for all your life. The reef protected patch of sea where families swim and sail and dive. Bermuda's treasures call you to a gleaming rainbow's end."

Literary convention has categorized figurative language (see, e.g. Brooks and Warren 1960) into a schema based on a literal/figurative continuum (see Figure 2). This provides a common set of terms and traditions for advertising as well as other forms of communication to draw upon. The most commonly used figures in advertising are simile, metaphor, and symbol, figures which can be used to create the somewhat less common structural form of allegory. All figurative

language makes use of imagery in comparisons: one thing is said in terms of something else (Barnet 1979), and the subject and object terms in the comparison represent "ideas which have an analogical equivalence to the intended meanings" (Shumaker 1965, p.49). A conceptual classification based on a literality continuum is pictured in Figure 2:

Literal words, of course, mean exactly what they say, and are not considered figures of speech. The more commonly used figures are explained in some detail to clarify the continuum.

A *simile* is a figure of speech which uses a comparative term - generally "like" or "as" - to conjoin explicitly items from different classes of experience. A literary example is the comparison between "love" and "the rose": the simile reads, "love is *like* a rose." An advertising example is the Honda ad for the Acura model which states in the headline: "It's programmed to think like our Formula 1 [racing] car." While the Acura and Formula 1 are both vehicles, they are different enough in quality and form to serve as subject and object terms in the analogy. On the other hand, "Winston tastes good like a cigarette should," memorable for using "like" instead of the more grammatically correct "as," is not a simile: Winston is literally a brand of cigarette.

A *metaphor* differs from a simile in that the comparative term is omitted: "love *is* a rose" is the metaphor developed from the simile above. In advertising, "Bermuda is you" and the perfume slogan, "She's very Charlie," are metaphors. These analogies compare two dissimilar entities just as similes do, but are considered to "have more expressive power, and....[be] more flexible and economical" (Korg 1962, p.9). A paraphrase of the Bermuda headline into simile form illustrates the loss of power when the simile is spelled out overtly. The rewrite, "Bermuda is *like* the qualities that describe your unique personality," is diminished by excess, for in figurative language as well as pictorial art, less is often more.

Symbols, often considered particularly complex forms of comparisons, are a class of representatives which stand for other things (Firth 1973). A symbol is a sensory image "so loaded with significance that it is not simply literal, and it does not simply stand for something else; it is both itself *and* something else that it richly suggests" (Barnet 1979, p. 198). In our example, the use of "a rose" as a symbol for love illustrates a symbol's function in BOTH literal and figurative fashion - denotatively and connotatively - as well as its non-relatedness to the object represented.

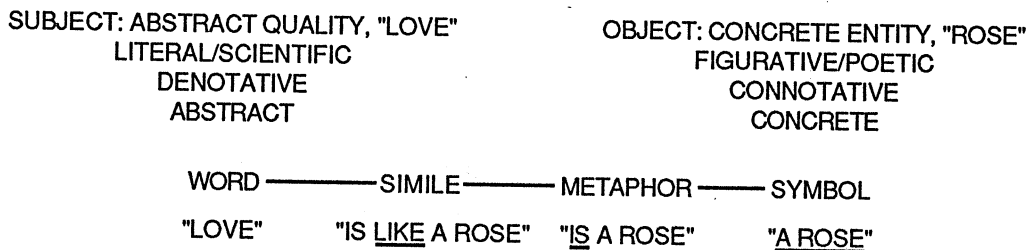
Since semiotics uses similar concepts, some explanation is needed to avoid semantic confusion.

Semiotic "signs" and "signals," unlike literary symbols, are usually defined as possessing characteristics inherently related to the object they represent (see Durgee 1986a). Furthermore, semiotic use of visual and pictorial symbols is generally considered "iconic" (Leiss, Kline, and Sully 1986), and thus outside the accepted verbal bounds of literary theory. However, both visual icon and verbal symbol are alike in being tangible entities with a similar function: each becomes a surrogate for the represented abstraction, since the explicit comparative term has been suppressed. In advertising, iconic and symbolic usage are often intertwined: the Prudential Insurance Company's rock, for example, is a concrete pictorial representation of the abstract notion of stability, and "rock-solid insurance" a verbal symbol of the same trait. But this is not always the case: media such as radio cannot use visual elements, and some advertising practitioners rely more heavily on verbal than visual elements in specific situations (see Ogilvy 1985). New insights into the relationship of visual and verbal symbols (see Rossiter and Percy 1980) may result if symbolic structures in poetry are considered.

Figurative language woven into the structural form of *allegory*, no longer fashionable in literature, has been used to considerable advantage in recent advertising. Allegory, defined as an "extended metaphor," is a well-defined literary form: "a narrative in which the objects and persons are equated with meanings lying outside the narrative itself" (Brooks and Warren 1960). C.S. Lewis considers allegory a representation of a "fundamental equivalence between the immaterial and the material....you can start with an immaterial fact, such as the passions which you actually experience, and can then invent *visibilia* to express them" (1958, pp.44-45). All varieties of figurative language can be used in allegory, a complex art form distinguished by structurally rigorous rules.

Allegory involves personified human traits acting out moral conflicts in dramatic fashion. The two characteristics of personification and conflict allow some advertisements to be interpreted as modern allegorical shorthand, and may account for its popularity. The *personification* of allegorical figures permits abstract traits to be clothed in recognizably human garb: the Seven Deadly Sins, for example, take repellant human shapes in much medieval literature. Personification has traditionally been a popular method for transmitting complex messages to less-than-literate mass audiences, and shows continued mass appeal because of its dramatic simplicity. Even more important, allegory is rooted in the consciousness of moral conflict - the internal battle

Figure 2
Literary Imagery



between good and evil - which has dominated the human psyche since at least the fourth-century A.D. Prudentius' *Psychomachia* is usually considered the first allegorical work, and in that poem, the theme of *bellum intestinum*, the genesis of allegory: "War rages, horrid war/Even in our bones; our double nature sounds/With armed discord" (Lewis 1958, p. 72). The moral conflict of classical allegory seems have been transmuted by analogy to the kinds of conflict (brand, product, candidate, idea) implicit or openly expressed in modern advertising.

Despite the association of allegory with late Medieval and early Renaissance literary tastes, it has been used to good effect in modern advertising. One of the most memorable 1986 ad campaigns can be read as a mini-version of the form: the humanized "Dancing Raisins," wearing sunglasses and sneakers and bopping to "I Heard it on the Grapevine." The raisins personify qualities of liveliness, high spirits, and energy acting out the concept of healthy natural snacks as "fun," implicitly in conflict with the product category of unwholesome junk food. Similarly, "Mr. Goodwrench," also an allegorical figure, is a human representative of the abstract quality of brand service acumen: the ad tag line states, "No one knows your GM car better than Mr. Goodwrench. No one." Here the conflict is between brands: General Motors' good service quality is imputed to be better than that of Ford, Chrysler, and foreign car makers because GM "is" Mr. Goodwrench.

Functions of Figurative Language

These figures of speech have important functions for advertising in general and services messages in particular. The purpose of non-literal usage is to make things more imaginatively appealing: "A mere listing of qualities gives a rather flat description; it may be accurate but it does not stir the imagination" (Brooks and Warren 1960, p.92). Figurative language is imaginatively exciting in three ways: it is "concrete, condensed, and interesting" (Barnet 1979, p. 187). Creative use of figurative language can produce messages which are emotionally alive, intellectually appealing, and memorable. The problem in advertising, of course, lies in operationalizing these constructs and extracting measurable insights from literary theory. While literary definitions of figurative functions are subjective, qualitative, and non-measurable, the interpretations are worth examining for associations with concepts already operationalized and accepted in advertising theory.

Poetic concreteness isolates and highlights feelings for the reader by endowing bland abstractions with precision and liveliness. This quality seems to relate to advertising vividness, thought to arouse emotion in consumers (Friestad and Thorson 1986). While controversy exists over vivid versus pallid information and consumer persuasion (see Drumwright 1985; Kiselius and Sternthal 1984), further exploration is needed to test the vividness effects of messages. Figurative condensation leads to a sudden burst of understanding, causing the reader to experience a shock of recognition when s/he "gets" the message. Interest, a result of the imagistic concreteness and condensation, is aroused in the reader, who then may find his/her imaginative stirring so intriguing that the message becomes embedded in memory. The relationship of interest-arousing capabilities of figures of speech to consumer memory encoding processes (see Bettman 1979) requires further study. The literary functions of figurative language may ultimately find scientific

corroboration if they can be translated into measurable advertising attributes, particularly brand awareness, recognition, and recall.

Importance to Services Advertising

Services advertising is thought to have special needs for figures of speech since the services offering is non-tangible (Shostack 1977). While the theory has not yet been tested, some researchers consider it plausible that services impalpability gains "tangibilization" by means of association with appealing imagery cues (see e.g. George and Berry 1981). The symbolic Travelers' umbrella, for example, is a particularly effective way of using a common everyday object with visual and tactile appeal to convey the abstract notion of protection. This condensation enables a simplification of the confusing galaxy of insurance products into the actual benefit sought by consumers: secure protection in a world filled with random danger.

Services advertising also has to differentiate the particular brand being offered from others, and can do so by use of of imagistic language. If consumers consider a service such as airplane travel generic and commodity-like, they will assign little "specialness" to competing brands. A metaphorical comparison such as the United airlines "friend" campaign (See Figure 3) can create brand uniqueness by associating the generic function of business travel with the warmth and companionship of personal friendship. The sensory appeal in "faraway places" is predominantly visual. Additionally, there is also an emotional appeal implicit in the phrase "your friend," which associates personalized intimacy with airline companies, generally viewed as impersonal and uncaring. The headline metaphor is extended in the text by the use of "friendly skies" which business travellers can choose to fly to the Pacific. This symbol widens out the figurative usage to the entire Pacific sky-as-friend. The enriched use of "friend" is reinforced in the third usage, the tag line "go with a friend," which augments the other sensory appeals by kinetic emphasis connecting personal and airplane movement. In under 100 words, then, the memorability of this air transportation service brand has been established. The differentiation from other brands is a result of the use and repetition of figures of speech designed to be embedded in positive ways in consumer memory.

Figure 3
United Airlines Advertisement

HEADLINE: Your friend in faraway places

TEXT: The most nonstops to the most top Pacific business centers. A very good reason so many business travellers choose the friendly skies to take them across the Pacific. And why you should, too. You'll find our Royal Pacific Service a real comfort along the way. Not to mention a powerful way to increase your Mileage Plus account. So the next time you're headed for Tokyo, Osaka, or any of eleven other Pacific destinations, go with a friend.

Services advertising can make use of sophisticated imagery to enable the consumer to comprehend complex abstractions (Shostack 1977), process them as tangible, and differentiate one brand from competing offerings

(George and Berry 1981). Unfortunately, advertising can also use the power of symbolic condensation to obscure by over-simplification, creating figures of speech which intentionally deceive or mislead consumers. Critics of advertising frequently condemn its language as one of "concealment" (Berman, 1981), the obverse of clarification. Further research is needed to test both the beneficial and harmful aspects of figurative usage empirically. Several propositions can be developed to test the effectiveness of services advertising in taking advantage of the full range of figurative language.

Future Research Propositions

Proposition 1: Verbal imagery used in figures of speech (similes and metaphors) is more likely than denotative literal usage (words and numbers) to differentiate one service brand from another.

Numbers seem to have more power to differentiate brands of financial services or supermarkets than bare words such as "money growth" or "milk prices": numbers in ads have been judged slightly more connotative and imagistic than literal words alone (George and Berry 1981). Percentages and/or dollar figures do not seem sufficiently interesting to differentiate a service so that it stands out in a crowded marketplace. In fact, numerical listings such as those which characterize mortgage lending firms or supermarkets may confuse consumers. Since similar products tend to advertise in the same print media space, a full page of generically similar numbers can blur in the consumer's mind. Differentiating the service by means of simile and metaphor seems potentially more useful to harness the connotative ability of advertising language as a marker of brand uniqueness. Differentiation can be measured by brand recognition techniques (Rossiter and Percy 1987) using telephone interviews to test recall of verbal messages.

Proposition 2: Symbolic usage which reinforces the figurative language with visual iconography is more likely than literal words and numbers to differentiate one service brand from another.

Services which break free from message clutter often rely on symbolic usage combining visual AND verbal elements to reinforce each other and establish unique brand differentiation. A visual/verbal symbolic pairing which comes to represent a brand through repeated display of the words/picture can establish a strong reinforcement-by-association effect. Corporate logos and images paired with verbal slogans - the Merrill Lynch bull, "a breed apart" - fall into this category. Interestingly, that symbol has already been modified from a herd of bulls into a solitary one, to meet what was thought to be consumer desire to stand out from the herd. Now the bull is being downgraded to a "cameo appearance" in ads in favor of increased emphasis on people and human emotions (Winters 1987). The exact nature of emotional responses to advertising, however, is only beginning to be investigated (see Zeitlin and Westwood 1986), and the relationship of verbal and pictorial symbolic usage to effects of feelings on consumer responses needs further examination. Some research on verbal versus pictorial information-

processing has taken place to date (see Childers and Houston 1984; Rossiter and Percy 1980), and the investigation needs extension to a services context.

Operationalization relevant to services industries requires content analysis of promotions to see how many and what kind of firms use verbal and/or pictorial elements in advertisements. The association between brands with verbal symbols, visual symbols, both, or neither can then be tested by recall measures, utilizing personal interviews if visuals are included (Rossiter and Percy 1987).

Proposition 3: Trite symbols in ads can create brand awareness of a service.

Fresh and original figures of speech, particularly symbols, are difficult to create. Many have been around for centuries and are considered overly conventional and "stale," and thus evocative of little response. But these qualities, viewed as undesirable in poetry (Brooks and Warren 1960), may not have the same negative effects in advertising. Even trite figures in a new advertising context can create awareness of a service brand, since it may be the paradoxical juxtaposition, not the symbol alone, which creates consumer excitement. For example, Massachusetts Financial Services uses objects such as needle-and-thread, spoons, and paper clips - things "which have been around a long time" - to represent the company image: "working hard for investors for 63 years." Tried and true everyday objects here create an association with the very longevity of the ordinary. Conventional symbols are capable of evoking strong reactions long after their originality has waned - the swastika, for example. The proposition that there may be little correlation between a symbol's originality and power in advertising needs testing, since the truly original, extremely difficult to create, may even be counterproductive in effect.

Operationalizing "triteness" can be done by peer judgments, a methodology frequently used in psychological research. One way of creating a trite/original continuum is to use an interdisciplinary compendium of symbols (see e.g. deVries 1976) for list generation. Subjects can then rate the symbols in terms of their judgment of the attribute of ordinariness. While some element of subjectivity is unavoidable, a greater measure of quantification than the lone critic's judgment is achievable. Operationalizing service brand awareness, also relevant to Proposition 4, most likely will involve recall measures, especially those that assess immediate versus delayed effects.

Proposition 4: Bizarre and idiosyncratic symbols in ads can create brand memorability for a service.

Originality is valued by advertising creatives, and may have special usefulness in making a service brand memorable. Some symbols are so original that they can be considered bizarre or idiosyncratic: they at first seem meaningful only to the creator, not the general public. While the assumption in poetic exegesis is that it is the reader's job to make sense out of symbols (see e.g. Richards 1929), this seems an unreasonable demand to make on the consumer of advertising copy. Nevertheless, unusual and out-of-context associations can lead to consumer recall of the ad execution and memory of the

brand. The key seems to be the advertiser's skill in establishing the connection clearly for the consumer by making the symbolic comparison explicit, rather than implicit. That is, the advertiser has to do more work than the poet, since the consumer will do less.

An example of originality is the use of the cartoon figure of Garfield the cat as the spokesperson in Embassy Suites Hotels ads, along with the corporate slogan, "You don't have to be a fat cat to enjoy The Suite Life." Garfield becomes a symbol of luxury living - a literal and figurative "fat cat" - featured as a cartoon figure in the midst of an otherwise realistic ad. The punned aspirational lifestyle, "The Suite Life," reinforces the tone of verbal play. While the placement of a cartoon animal in a realistic human environment is jarring, it does lend a distinctive dimension of concreteness and rememberability. The total of juxtaposed odd elements seems effective as a result of clearly spelling out the drama to the perceiver.

Operationalization of "bizarreness" resembles that of triteness: peer judgments can be used to rank symbol/service on a continuum. Actual ad campaigns probably will have to be used, since what is being ranked is the match between both parts of the analogy, not the symbol alone, as in Proposition 3. Researchers can select ads which seem bizarre to them, on the basis of subjective judgment and trade press commentary: for example, Crazy Eddie, Calvin Klein's "Obsession" perfume, Georges Marciano for "Guess?" jeans. Subjects can be asked to judge the nature, degree, and quality of oddness. Additionally, studies of the involvement level of consumers with different executions of services ads (see Rossiter and Percy 1987) would also be useful to measure the amount of effort a consumer is willing to expend on message interpretation. Measures of brand recall, finally, could be adapted to test changes in the service/advertisement involvement level the consumer experiences as a result of bizarre vs. ordinary symbols.

Proposition 5: Effective allegorical usage relates to the socio-cultural context of services advertising.

Advertising in general is culture-bound, since messages must use symbols which are understood and accepted by the target audience (Pollay 1986). Because allegory requires humanization of abstract qualities, the process is quite culturally determined: each culture assigns traits deemed appropriate for specific humans, categorized by age, sex, family position, social status, and so forth. Relativistic differences can affect representations of human abstractions as *personas* for services to a greater degree than for goods, because consumers experience closer human relationships and greater intimacy with providers, often viewing them as emblematic of the total service product. The advertising decision to personify a service by creating a human representative is bound by cultural constraints operative in the consumer's temporal and spatial context. Salient person-identities such as sex (Stern 1987), age (Belk 1986), race, class status, and so forth need to be chosen for the fictional *persona*; the demographic traits must be acceptable in the socio-cultural environment.

The allegorical representation, further, has to function effectively both within the context of the cultural coding (see Durgee 1986b) that demarcates the conflicting forces within any system, as well as within the confines of the advertisement itself. For this reason,

sensitivity to prevailing cultural values is necessary: when a service consumer "meets" an allegorical *persona* in action in an ad, the consumer is meeting the service itself, and if the figure is culturally inappropriate, the consumer may make unwanted negative associations of product/provider. The presentation of an old black female mammy as an allegorical figure representing caretaking for a hotel chain would be considered offensive to most Americans. Yet, interestingly, just such a figure is used in goods advertising: Quaker Oats' Aunt Jemima!

Measuring the effectiveness of different representations of the humanized trait involves an assessment of current cultural values. This suggests a multi-step process: first, research analysis of the literature on prevalent cultural stereotypes - beautiful women, for example - should take place. Next, the stereotypical typologies will probably need updating by content analysis of cultural artifacts such as media performances and works of art to generate accurate conceptualizations of appropriate personifications. Last, ethnomethodological field research will be valuable to enhance knowledge of "folk" archetypes on the grassroots level. Measures of the advertising effectiveness of allegorical usage in context, dependant on careful evaluation of the context, can then be studied in terms of the *persona's* contribution to brand awareness, recognition, and recall. Knowledge of acceptable cultural parameters as well as their real-life translation would enable the advertiser to create the mesh between allegorical usage and cultural values appropriate for global advertising, especially important in today's multinational services marketing environment.

Conclusion

The examination of figurative language in services advertising has only begun, and requires further research to analyze the best means for producing desired effects on consumers. Creation of advertising messages bears strong resemblance to other literary endeavors, and services advertising in particular can benefit from greater understanding of poetic and literary convention. Services' special need for dramatizing the intangible offering lends importance to the study of the nature, uses, and fads and fashions of imaginative language. In services, "what you see is NOT exactly what you get," which forces figurative language to perform more difficult tasks in appealing to the consumer. Poetic theory represents a rich territory which advertising creators can mine for effective and exciting imagistic language uses.

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The Role of Individual Differences and Multiple Senses in Consumer Imagery Processing: Theoretical Perspectives

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Abstract

An important marketing issue concerns how consumers evaluate information. Imagery processing can influence how consumers respond to marketing stimuli. Understanding how consumers use imagery in their multiple senses will allow us to realize the benefits that effective use of imagery offers. This paper discusses individual differences in imagery ability, single sensory vis-a-vis multisensory stimulation and neuroscience perspectives on processing in various senses to provide background for testing marketing issues.

Introduction

Consider ways that you recall, perceive, and evaluate consumer products and services. For example, when choosing bakery products, what is expected? Should the baked bread smell fresh? Must the croissant feel crunchy? How should it look? Does it sound crispy?

How about the last exercise program you adopted? Did the music you heard or the appearance of the instructor influence you? What odors do you remember? Do you exercise with a videotape or audiotape, or do you prefer a direct experience at a facility? Furthermore, how are recall, perception, and evaluation affected by whether you can image your experience by either seeing, hearing, touching, tasting, feeling, or smelling it? Marketing stimuli can appeal to a variety of consumer senses. Consumers often use imagery in multiple senses to experience marketing stimuli. Understanding how consumers use imagery through their senses can substantially improve marketing effectiveness.

Marketers have a wide choice about how to present their products and services. New opportunities have arisen with the advent of widespread ownership of videocassette recorders, teleshopping, talking point of purchase displays, smell strips and powder strips. Some marketing tools are more vivid than others. Consumer responses to marketing stimuli are, in part, determined by how vivid these experiences become in imagery processing.

How can an understanding of imagery be used most effectively to market a service or product? Several questions that arise include:

- o Is imagery more effective when stimulated in one sense or in multiple senses?
- o Do the effects of imagery processing vary according to type of product or service?
- o How do consumers differ in their abilities and tendencies to perform imagery processing in various senses?
- o How can we extend our understanding of imagery processing to improve marketing effectiveness?

The information processing paradigm has shown that different consumers use different skills and strategies to evaluate information (e.g., Bettman, 1979). This research has been extended to compare verbal versus imagery processing (Childers et al., 1985; MacInnis and Price, 1987). While there is recognition¹ that imagery occurs in multiple senses, the role of the various senses has not been explored. Since consumers often use their auditory, visual, kinesthetic, tactile, taste, and olfactory senses to interact with their environments, and imagery can be a strong mediator of individual experience, it becomes important for consumer researchers to understand how imagery operates in these senses.

To begin an inquiry into the role of imagery in the various senses for consumer processing, a review of the theoretical underpinnings and evidence regarding how people use their senses is useful. An excellent review of psychological and marketing research perspectives of imagery processing is available (MacInnis and Price, 1987), and thus will not be repeated here. This paper will add to the literature by introducing some new background that relates to imagery. Following a brief introduction on mental imagery, this paper will discuss evidence on individual differences in imagery ability, single vis-a-vis multisensory stimulation and neuroscience perspectives on processing through various senses.

Research on Mental Imagery

Individual Differences

It is generally accepted that there are individual differences in imagery ability (Marks, 1972, 1973). For example, using a test that measures clearness of concrete images, Griffitts (1927) tested for the dominance of imagery type and found that among 87 subjects, approximately 90% had images of greatest clarity of vividness in the visual mode, 5% in the auditory mode, and 5% in the kinesthetic mode. Among those cases where visual ranked first, auditory was ranked second by 76% and kinesthetic was ranked second by 24%. In every case where auditory ranked first, visual was a close second. In 5 cases where kinesthetic was ranked first, visual was ranked second in 3 and auditory was second in 2.

In another study, Natasze suggested that the incidence of illusions¹ aroused by imagination was correlated with individual differences in imagery ability, and in particular, with differences in dramatic talent (as described by Uzandze, 1966, p.131). Illusions attributed to verbally aroused images were experienced by professional actors 87.8% of the time, by drama students 80% of the time and by nonactors 31.1% of the time. Actors experienced vivid images of "scenes" while ordinary subjects experienced more abstract mental activity. This was attributed to the "figurative imagination" possessed by the actors and not the

¹ Illusions are the mental representations generated as a result of asking subjects to imagine a specific stimulus.

ordinary subjects. The possibility of demand effects indicates that this type of experiment should be replicated using more objective tests to differentiate subjects on imagery ability.

In a study of 64 scientists, Roe (1951) attempted to show that individual differences in "symbolic habits" are related to differences in occupation. She found a pattern of relationships between habitual type of "symbolic" activity and scientific field. Biologists and experimental physicists were predominantly in the visual imagers group, while theoretical physicists, psychologists, and anthropologists were concentrated in the group that reported habitual use of verbal symbolization. She also investigated the profession of the fathers of these scientists and found that the fathers of most verbalizers were in "verbal professions" (e.g., lawyer, clergyman) and that the fathers of visualizers were primarily in nonverbal professions (e.g., physician, engineer). While Roe speculated about whether the relationships found reflect heredity or training and experience, the role of either factor cannot be determined from Roe's data.

Additional studies have investigated individual differences in imagery ability and how they affect learning and memory. Davis (1932) found positive correlations between recall and individual differences in imagery as measured by subjective reports. Sheehan (1966a, 1966b, 1967) found accuracy of visual memory was related to individual differences as measured by his shortened version of the Betts' questionnaire on imagery or by subjects' ratings of the vividness of imagery in the experimental setting. Sheehan concluded that vivid imagers perceive literally, while poor imagers use semantic coding devices to organize their perceptions.

Several studies that measure imagery ability have shown that good visualizers recall pictures more accurately than poor visualizers. Using the Vividness of Visual Imagery scale (VVIQ) to assess imagery vividness, Marks (1972, 1973) found a positive correlation between VVIQ scores and recall accuracy. McKelvie and Demers (1979) studied good visualizers' and poor visualizers' ability to recall pictures, abstract words, and concrete words. Good visualizers produced a significantly higher short term recall for all types of material, especially with concrete words. In a long term task, good visualizers produced significantly higher recall for both concrete words and pictures, but not for abstract words.

Differences in imagery ability have also been correlated with voluntary control of autonomic processes. For example, White (1978) found that ability to control salivary flow through voluntary imaging is related to reported vividness of imagery across all sensory modalities. Another study showed ability to increase heart rate through voluntary imaging is positively correlated with reported vividness of visual imagery (Carroll et al., 1979). Hirschman and Favaro (1977) also found a positive correlation between ability to increase heart rate through biofeedback training and reported vividness of auditory and visual images.

Multiple Versus Single Sensory Stimulation

Studying the role of multisensory versus single sensory message stimuli can help elucidate the role of imagery ability in various senses in influencing consumer processing. There are two possibilities: 1) conflict among multiple channels which would interfere with message transmission, or 2) complementarity among multiple channels which would enhance message

transmission. Some theorists suggest that there is a central processing system that all incoming stimuli pass through before continuing on to the next specialized sensory system. This would suggest that multisensory activation, an overload of stimulation, or perhaps only certain types of conflicting multiple sensory activation, may cause interference in the central processing system. In this case, processing may be more efficient for a single sensory vis-a-vis multisensory stimulation.

Given the complex interaction among the senses, the question is not whether complementarity among multiple channels or conflict among multiple channels occurs at all times, but under what conditions each mechanism operates. This is probably a function of characteristics, such as, the nature of the stimuli and how information processing occurs among the multisensory processing system.

For example, for complex unfamiliar stimuli, imaginal processing that results from stimulation of a single sense may enhance the needed concentration for effective processing. Multisensory stimulation of complex unfamiliar material could be expected to create a great deal of noise and thus, interfere with the clarity of imaginal processing, causing an overload phenomenon. Therefore, one may hypothesize that:

Hypothesis 1: For complex, unfamiliar stimuli, single sensory stimulation is more memorable as compared with multiple sensory stimulation.

Similarly, when simple familiar stimuli are processed, imaginal processing in multiple senses may be well coordinated. Thus, in this situation, multisensory imagery may enhance the vividness of the imagery experience. Therefore:

Hypothesis 2: For simple, familiar stimuli, multisensory stimulation is more memorable as compared with single sensory stimulation.

Ahsen (1981) discusses the possibility that, in certain people, visual imagery can be so powerful that it prevails strongly and curbs other senses. A strong visual image can create resistance to the recall of other sensory images and causes distortion in the perceptual system. Segal and Fusella (1970) showed that generating irrelevant visual images impairs visual signal detection more than irrelevant auditory images, while auditory images produced more interference in an auditory detection task than did visual images. Segal and Fusella (1971) demonstrated similar modality-specific interference in a total of six different sensory modalities (vision, audition, touch, smell, taste, and kinesthesia). In reviewing this data, Marks (in Sheikh, 1983, p.101) discusses that the result that images interfere with perception suggests that channel space is taken up by images which are in competition with processing of perceptual signals.

In contrast, research on opinion change indicates that audiovisual messages induce greater opinion change than auditory (i.e., audiotaped) messages (Frandsen, 1963). Understanding the effects of individual differences and studying the results of processing stimuli directed to various senses should help resolve these

questions about when multiple sensory and when single sensory stimulation is most effective.

A related concept is vividness of the stimulus. Marketing researchers have explored the effects of vividness on memorability and cognitive structure. Kisielius and Sternthal (1984) presented brand information to subjects using either sentences alone (low vividness condition) or sentences and drawings in combination (high vividness condition). A subsequent recall test showed that more brand information was recalled when sentences and drawings were presented in combination. They postulated that vivid stimuli enhance cognitive elaboration, resulting in the development of more storage in memory, and hence a greater likelihood of the information being available for subsequent recall tasks.

The effect of the composition of visual stimuli on recall has also been explored. Lutz and Lutz (1977) compared interactive stimuli (pictures integrating brand name and product class) with noninteractive stimuli (pictures depicting brand name or the product separately from the written form of the other member of the pair). In a paired-associate learning task, they found that the integration of the information into a single image increased recall of that stimulus.

It is interesting to note that in these studies the "multiple" stimuli, i.e., print (or verbal) and pictorial, enter the subject's mind through the same channel, i.e., visual. Enhancement may occur because when stimuli enter through the same channel and they are synchronized, they reinforce each other. This should be distinguished from stimuli entering the mind through two different channels, i.e., visual and auditory, or stimuli that present the print and picture in a disjointed manner, where incoming stimuli may not be well synchronized, and therefore create interference.

One additional perspective on the effects of multisensory imagery derives from experience in clinical settings. The role of multisensory stimuli in clinical patients may provide clues for predicting processing by non-clinical individuals. In particular, clinical patients' responses to imagery experiences vary according to how many different sensory channels are activated. Brown (1977) explains that the multisensory nature of some hallucinations may be important to the veridicality of the image experience. For example, dream hallucinations are accepted as real when the visual image is supported by other senses, such as when we feel, hear, smell, and/or touch the dream image. A hallucination which involves only one perceptual modality can be disconfirmed by the other senses. A hallucination which shares elements of two or more modalities reduces the effects of the objective world for informing the viewer that his hallucinations are false. An anecdotal example is a patient reported by Hecaen and Robert (Brown 1977). An auditory hallucination was recognized as false until the visual component of the hallucination appeared, at which point it was taken for a real perception. It is possible that multisensory stimulation may affect the believability of an imagery experience in nonclinical individuals as well, particularly for individuals who are strong imagers.

Clinical settings provide other background that may be useful to understanding consumer behavior. A large amount of research has been conducted in the neurosciences on how the brain functions and malfunctions in clinical patients. While the wide range of normal brain function is not the main focus of clinical

studies, concepts gleaned from normal subjects, who are observed in this type of research, can provide useful insights for studying consumer behavior. Therefore, neuroscience perspectives are presented next so that they can be used to address marketing issues.

Neuroscience Perspectives

Introduction

Separate systems in the brain are responsible for different types of thought processes. For example, there are specific pleasure centers. (When an electrode is placed in a cat's pleasure center, and attached for autostimulation, the cat will continue stimulating itself incessantly, for days, without taking time to eat, drink or sleep.) Other regions of the brain are, in large part, responsible for auditory, visual and kinesthetic sensory activities. Furthermore, different regions are responsible for different levels of processing, i.e., primary, secondary, and tertiary regions. An enervated primary region fires electrically and sends impulses to the secondary region which begins to "develop" the nature of the stimuli. The secondary region then fires electrically and stimulates the tertiary region which makes a final interpretation and further integrates the stimuli.

The existence of separate regions and pathways for the various sensory processes implies that, in some respects, sensory systems function separately. Individual differences in sensory abilities, e.g., musical ability, keenness of observation, verbal skills, are observed often. These differences suggest that the pathways and connecting fibers that serve to integrate sensory activity differ among individuals. The existence of separate sensory systems and numerous interconnecting fibers allows for the specialization we observe. Thus, a violinist who needs to hear, and perhaps feel, his or her music may possess superb connections in the temporal lobe, which is responsible for audition, but weaker connections in the occipital cortex, which is responsible for vision. A boxer or football player, on the other hand, who must perceive the moves by the opposition and mobilize responses, requires excellent visual and kinesthetic connections. Although instruments are not yet precise enough to document these phenomena and differences among individuals, the following section is offered to explain the work in neuroscience that supports this view of the mind.

Specialization in the Brain

Anatomical measurements, recordings of electrical activity, blood-flow studies and metabolic studies have allowed us to explore relationships between mental processes, behavior, brain function and brain activity. Such techniques offer partial validation of theories about brain function and activity in normal subjects.

Attempts to map brain activity have demonstrated that different areas of specialization exist. For example, areas of sensory and motor specialization in the cerebral cortex have been demonstrated. Direct electrical stimulation of specific areas of the brain permits identification of centers that control speech and language, and activation of elementary sensations of seeing, hearing, smelling, and feeling (Penfield and Roberts, 1959). Also, experimental probing has shown that specific brain locations receive stimuli for and send signals to different body parts (e.g. toes, foot, leg, hip, etc.).

Further, studies on clinical patients indicate that images correspond in a general way with certain brain areas. Brown (1985) suggests that the sequence of image types in patients developing from a vague image to a vivid complete image, maps onto levels in the microstructure of brain regions. He identified studying the neural substrates of various stages of image development as important goals for future research.

It is generally accepted that in the brain, specialized functional regions are interconnected by multiple, complex groups of interconnecting fibers that serve to integrate sensory input. While some researchers question the existence of functionally specialized sites under certain conditions (Lashley, 1950), most agree that under normal conditions, functional specialization occurs.

Evidence of Systems of Specialization

Based on existing data and scientific judgment, two theories of neural message transmission have been proposed by neurological scientists (Patton et al., 1976). These are pattern-coding and place-coding. Each may be useful to describe different brain properties. Pattern-coding postulates that each signaled piece of information is represented as a distinctive pattern of cell discharge in sensory receiving areas. Pattern-coding is economical in the sense that each transmission line is used on different occasions to signal different types of information, and thus, is only limited by the number of distinctive patterns. Morse code is a simple example of pattern-coding. Intensity discrimination is traditionally believed to be pattern-coded.

Place-coding postulates that discharge of a unique set of centrally located neurons underlies each discriminable sensory event. Although the mechanism for modality discrimination is controversial, traditionally, it is believed to be place-coded. For the place-coding view to be valid, the existence of "private paths" from the periphery to the central receiving area must be demonstrated for each modality. The fact that many receptors respond selectively to a specific type of physical energy has been used as evidence to support modality specificity. However, support for the place-coding theory does not require that all pathways are modality specific; it merely requires the presence of some specific pathways. Burgess and Perl presented convincing evidence for modality specificity of secondary neurons when they found that certain areas and relay sites respond selectively to peripheral stimuli (e.g., mechanical stimuli). Patton concludes that for most modalities, there appears to be satisfactory evidence for the existence of some private pathways.

Another phenomenon that validates the place-coding theory is when the specificity of a sensory response is independent of the kind of physical stimulation that causes the specific central cells to discharge. This phenomenon was first noted by Muller in the 19th century who states in his law of specific nerve energies that the quality of sensory experience depends on which receptors are excited and not how they are excited. Muller found that specific cutaneous² sites yield cold sensations from both cold and warm stimuli--often called "paradoxical cold".

For visual and auditory sensations, the evidence for place coding is stronger. Electrical stimulation of cells in the visual cortical receiving area in human

subjects produces sensations of flashing lights. Similarly, stimulation in the auditory receiving cortex produces auditory sensations. It was this concept of place-coding that prompted DuBois Raymond to whimsically predict that if the auditory pathways were connected to the visual cortex and the optic pathways to the auditory cortex, we would see thunder and hear lightning!

Another source of evidence substantiating place-coding is the loss of modality ability when particular areas of central neurons have been destroyed. For vision, damage to the visual cortex in the occipital lobe in humans produces complete and irreversible blindness. This is the basis for concluding that the discharge of specific cells underlie conscious sensation of vision. This has not been decisively demonstrated for other senses.

The place coding theory and modality specificity suggest that processing varies according to which sense is stimulated. Assimilation and rehearsal of information should be better, when processed through a stronger sensory system than a weaker one. Therefore:

Hypothesis 3: Individuals who possess strong imagery ability in a particular channel more accurately recall the stimulus information processed through that channel than individuals who possess weaker imagery ability in that channel.

Similarly, individuals tend to have more experience and often favor certain sensory modalities, e.g. a violinist versus a football player. As a result, greater confidence may ensue from processing information through a well developed imagery channel than a less developed imagery channel. Therefore:

Hypothesis 4: Individuals who possess stronger imagery in a particular channel are more confident about stimulus information processed through that channel than individuals who possess weaker imagery ability in that channel.

Evidence from Cerebral Blood Flow Studies

Regional cerebral blood flow (rCBF) techniques have been used to reveal different areas of cortical³ brain stimulation during sensory stimulation. Lassen et al., (1977) found that auditory input, in the form of music, increased activity in one brain region while other regions were activated as a result of visual input in the form of looking at a cross-shaped figure. Simple tactile stimulation of the hand, mouth, and foot activated yet other regions. Larsen et al., (1977) conducted a listening test where subjects were instructed to listen to simple words, onomatopoeia such as "splash" and "crack", and found that increased activity was induced in the left hemisphere and to a lesser degree in the right

³ Cortical refers to the outer portion of an organ. In the cerebrum, this the layer of gray matter covering the hemispheres of the cerebrum and is where the nerve cell bodies are located. The cerebrum is the portion of the brain responsible for intelligence and memory, i.e., the place where we perceive, remember, think, image and make decisions.

² Cutaneous means relating to the skin.

hemisphere. By contrast, in a speech test, where subjects counted to twenty or mentioned days of the week at a rate of one per second, increased activity was induced in the left and right hemispheres, but in regions that are different from those activated by the listening test. It is interesting to note that the regions activated in the left and right hemispheres are often different.

The relevance of these findings is the implication that perceptual tasks involving different senses appear to activate different regions of the brain. These phenomena lend support to the concept that individual processing and responses vary according to which sensory system is activated. Sensory processing vis-a-vis imagery may activate in a similar way.

Conclusion

The neuroscience evidence points towards specialization in brain activity. Regardless of whether these results are from variations in genetic and/or environmental factors, it seems reasonable to expect differences in types of specialization and abilities among individuals. Differences in mental imagery and separation of sensory activities mean that people can be reached in different ways. While precise identification of differences in brain activity among individuals is difficult to demonstrate with technology generally available today⁴, the preceding background and rationale for individual differences provide insights about why people differ in recall, perception, evaluation, and behavioral responses, and suggest that individuals can be expected to vary their responses to different types of sensory stimulation. Future research that correlates brain activity with various responses would be illuminating.

This paper emphasizes the multisensory nature of imagery and presents perspectives from the neurosciences that support specialization in brain function. The abilities or preferences of different individuals in imagery processing are, in part, a function of which sense is stimulated and how well that sense is developed in imagery processing. Understanding how individuals differ in their abilities to process imagery in various senses, and how use of imagery influences the way consumers interpret their environment, can help identify more effective ways to reach the consumer.

Possible relationships to explore include:

- o How individual differences in imagery ability influence recall and believability of marketing stimuli.
- o How processing varies according to which sensory modality is stimulated, e.g., auditory, visual, audiovisual, kinesthetic, etc.
- o How vividness of imagery in one sense affects consumer responses, as compared

with responses to vivid versus unvivid imagery in another sense or in multiple senses.

- o How imagery effects vary according to product or service type, i.e., are some products better represented through visual imagery while others through auditory, kinesthetic or olfactory imagery?

Imagery processing is often used by consumers to evaluate marketing stimuli, and consumers differ with respect to their ability and desire to invoke imagery processes. Imagery can potentially improve the believability and memorability of a communication and influence consumer processing and responses. A multisensory approach to imagery processing offers the possibility of realizing the substantial benefits that proper use of imagery can provide.

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⁴ Sophisticated innovations such as the PETT scanner, i.e., positron emission transaxial tomography, which identifies locations of the brain activity by tracking utilization of radioactively tagged glucose in the brain, holds the promise of relating brain activity to behavior more precisely. Since there are fewer than 20 PETT scanners around the world, and they are quite costly, most researchers rely on less precise measurements.

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The Role of Argument Quality in the Elaboration Likelihood Model

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ABSTRACT

This study examines the conceptualization and manipulation of the argument quality construct in previous tests of the Elaboration Likelihood Model conducted by Petty and Cacioppo and their associates. A conceptual definition of argument quality is developed, borrowing from McGuire's (1960) and Fishbein and Ajzen's (1975) accounts of the attitude change process. The results of an experiment suggest that argument quality, as conceptualized and operationalized in previous ELM studies, confounds two distinct components, *argument strength* and *argument valence*. The implications of this distinction for understanding the effects of persuasive communications in the consumer behavior domain are discussed.

INTRODUCTION

Petty and Cacioppo's (1981) Elaboration Likelihood Model (ELM) is among the most influential current approaches to understanding the effects of persuasive communications. The ELM is particularly appealing to consumer researchers because of its explicit attention to persuasive effects under both high and low involvement conditions. In essence, audience involvement with the persuasive communication (sometimes referred to as motivation to process the message) is seen as a key moderating influence on the nature of the process through which a message exerts its persuasive effects on the audience.

The endpoints of the involvement continuum are associated with two distinct "routes" to persuasion, with high involvement corresponding to the so-called "central route" and low involvement representing the "peripheral route." In the latter case, according to Petty and Cacioppo, persuasion cues such as source credibility and attractiveness, number of arguments, and the like are more crucial to achieving persuasive effects than is actual message content. However, in the high involvement case, the strength or quality of the persuasive arguments in the message is thought to drive the process. Numerous studies have reported the expected interaction between audience involvement with a persuasive message and the quality of the arguments in the message (Petty and Cacioppo 1979, 1980, 1984; Petty, Cacioppo and Goldman 1981; Petty, Cacioppo and Schumann 1983).

EXAMINING THE ARGUMENT QUALITY CONSTRUCT

Conceptualization

Petty and Cacioppo (1981, pp. 264-5) have discussed *argument quality* as the audience's subjective perception of the arguments in the persuasive message as strong and cogent on the one hand versus weak and specious on the other. Given diligent processing of the message, then, strong arguments are expected to yield favorable cognitive and affective responses to the message, while weak arguments should lead to

counterargumentation and generally negative reactions to the message. While Petty, Cacioppo and Heesacker (1981) describe strong arguments as being "...logically sound, defensible and compelling" and weak arguments as being "...open to skepticism and easy refutation" (p. 435), the argument quality construct itself has not received much attention in the development of the ELM. Little or no emphasis has been given to identifying the underlying dimensions on which arguments can differ in "quality." In light of this, emphasis solely on the "logical" aspects of the argument quality manipulation may be unjustified, as will be discussed more fully below.

Operationalization

In their empirical research, Petty, et al. (e.g., 1981, 1983) have assigned argument quality a secondary role as a methodological tool employed to test ELM predictions. For example, Petty, et al. (1981) reported that:

"...the strong version of the message provided persuasive evidence (statistics, data, etc.) in support of the exam...the weak version of the message relied more on quotations, personal opinion and examples to support its position...the strong arguments were selected from a pool that elicited primarily favorable thoughts in a pretest, and the weak counterarguments in a pretest" (p. 850).

This procedure resulted in the construction of two editorials, each of which contained eight arguments in favor of senior comprehensive examinations. Petty, et al. (1983), in a study conducted in a consumer behavior context, pretested a series of arguments in favor of a disposable razor for their "potency" (p. 139). The resulting ad claims are shown in Figure 1.

FIGURE 1
AD CLAIMS USED BY PETTY, CACIOPPO AND SCHUMANN (1983)

STRONG VERSION OF THE EDGE AD

- Advanced honing method creates unsurpassed sharpness.
- Special chemically formulated coating eliminates nicks and cuts and prevents rusting.
- Handle is tapered and ribbed to prevent slipping.
- In direct comparison tests, the Edge blade gave twice as many close shaves as its nearest competitor.
- Unique angle placement of the blade provides the smoothest shave possible.

WEAK VERSION OF THE EDGE AD

- Floats in water with a minimum of rust.
- Comes in various sizes, shapes and colors.
- Designed with the bathroom in mind.
- In direct comparison tests, the Edge blade gave no more nicks or cuts than its competition.
- Can only be used once but will be memorable.

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Examination of these arguments as well as the arguments used in the editorials in Petty, et al. (1981) leads to the conclusion that argument quality, as manipulated, may not be reflecting solely the *logical* aspects of a persuasive message. Rather, a considerable difference appears across conditions in the *desirability* of the arguments (i.e., attributes of the advertised razor). For instance, getting the "smoothest shave possible" is almost certainly seen as being quite desirable. It probably represents a basic objective of shaving. On the other hand, a razor that "can only be used once" is rather undesirable for most individuals. In fact, the two sets of attributes appearing in the two ads are so disparate in terms of their desirability that a subject seeing both ads might easily imagine that the ads are for two completely different products, one which is very good and one which is not. As a result, interpretation of past results associated with the argument quality construct must be tempered somewhat due to the nebulous nature of the construct, as conceptualized and operationalized.

CONCEPTUALIZATIONS OF ARGUMENT QUALITY

Consideration of the conceptual material relating to argument quality brings to mind earlier work by McGuire (1961) proposing a syllogistic analysis of persuasive communications. The nature of Petty, et al's. (1981, 1983) operational procedures pointed out the distinction between the logic of an argument and its valence, a partitioning paralleling the well known Fishbein and Ajzen (1975) model of attitude. In addressing the argument quality construct then, these two related models will first be reviewed as they relate to argument quality.

Fishbein and Ajzen (1975)

Fishbein's model has enjoyed much attention in the consumer research literature as a model of attitude formation and change. In brief, an individual's attitude toward an object is modeled as a function of the sum of all beliefs (b_j) about the object, weighted by the "evaluative aspects" (e_j) of those beliefs. Fishbein and Ajzen's (1975) analysis of a persuasive communication in terms of its relationship to beliefs has received less attention, though it is potentially useful in the present investigation.

In discussing the structure of a persuasive message, Fishbein and Ajzen posit that any message contains a set of arguments concerning beliefs that link the object with positive and negative consequences and evidence in support of those arguments. *Primary beliefs* are defined as beliefs held by the individual which serve as the fundamental determinants of the dependent variable (i.e., attitude toward the object). For example, one's attitude toward *Sports Illustrated* may be based on the primary belief that *Sports Illustrated* offers the broadest coverage of sports. That is, the belief that *Sports Illustrated* offers the broadest coverage of sports directly determines the attitude towards the magazine. *Proximal beliefs* are pre-exposure beliefs that correspond to message arguments. For example, if the audience is exposed to a message stating that *Sports Illustrated* has only the most qualified writers on its staff, then the pre-exposure belief about the qualifications of *Sports Illustrated* writers would be the corresponding proximal belief. With respect to the communication itself, the principal assertions of the persuasive communication are called *target beliefs*. They represent the intent of the

message, which is to change the existing beliefs of the audience to fit exactly with the target beliefs being communicated in the message.

Fishbein and Ajzen (1975, p. 460) summarize this framework with the following statement:

"In sum, a persuasive communication comprises...a set of belief statements. Each statement corresponds to a proximal belief held by the receiver. Some of these proximal beliefs may serve as...target beliefs, and still others as beliefs that are assumed to support the target beliefs."

Thus, in an advertising setting, a set of arguments is chosen to alter or create beliefs on the part of the consumer which are consistent with the goals of the advertiser. These are the target beliefs of the message, which may correspond to primary beliefs influencing the consumer's attitude directly, or beliefs that require the consumer to make certain inferences before any change in attitude occurs. Evidence may be provided so that *support beliefs* are formed, leading to greater acceptance of the target beliefs.

Of particular importance in the present situation is that each target belief has associated with it a belief strength (b_j) and a valence (e_j). That leads to the characterization of argument quality as comprised of two separate components, *argument strength* and *argument valence*. Argument strength is defined as the audience's subjective probability that the attitude object is associated with some outcome or consequence. Argument valence is the audience's evaluation of that consequence. Furthermore, Fishbein and Ajzen's notion of *support beliefs* relate directly to McGuire's work on syllogisms.

McGuire (1960)

McGuire (1960) proposed a syllogistic model of cognitive relationships in response to the emerging notion that humans have a need to maintain consistency among feelings, thoughts, and actions. The basic idea was that this need for consistency is a powerful determinant of individual belief systems. McGuire's model was based on a formal model of cognitive consistency, wherein individuals classify three propositions that stand in a syllogistic relationship to one another as being either true or false. McGuire extended this deterministic logic by applying subjective probabilities to the analysis, asserting that a probabilistic model is consistent with observable human behavior in that it allows for variations in an individual's commitment to particular beliefs and for logical fallacies commonly made by humans.

McGuire applied his model in the context of a persuasion attempt by constructing persuasive messages with underlying syllogistic structures. That is, each communication was designed to change beliefs corresponding to the first and second premises of a logical syllogism. Subjects' beliefs about the first and second premises and the conclusion (in terms of subjective probabilities) were measured both before and after exposure to the communication. Of importance to the present investigation are the notions that cognitive systems can be conceptualized as sets of probabilistic relationships among beliefs in a hierarchical syllogistic network and that persuasive messages have an underlying structure which is syllogistic in nature.

Conceptualizing the Argument Quality Construct

When the principles of McGuire's cognitive consistency model are considered in conjunction with those of the Fishbein and Ajzen attitude model a richer conceptualization of argument quality emerges. Within the McGuire model *argument strength* may be defined in terms of the likelihood that the conclusion of a logical syllogism is accepted. If the conclusion is ascribed the role of the *target belief* in Fishbein and Ajzen's model, then Fishbein and Ajzen's *support beliefs* can be viewed as the premises in a syllogistic structure underlying the target belief.

As noted earlier, Fishbein and Ajzen have suggested that the likelihood that the target beliefs of a persuasive communication are accepted is increased if beliefs in support of the target beliefs are formed. This suggests that a manipulation of argument strength ought to alter the nature of the supporting evidence in the communication while holding the content of the target beliefs themselves constant across conditions. However, in their manipulations of argument quality Petty et al. alter the target beliefs of the messages so as to be either low or high in desirability. Supporting evidence plays little or no role in the manipulation. As should be apparent from the above conceptualization of the argument quality construct, these manipulations manipulate primarily argument valence rather than argument strength. Figure 2 shows how argument strength might be manipulated in the context of the Edge disposable razor ad.

While it is useful to demonstrate that highly involved subjects are more influenced by positively valenced arguments than by negative or neutrally valenced arguments, that relationship is less important and interesting than one in which argument strength can be related to persuasion, with a fixed argument valence. The latter issue is the one faced by advertisers who presumably have identified the most desirable properties of their products and face the problem of communicating those features as persuasively as possible. In other words, the product itself has a fixed set of attributes from the perspective of the advertiser. Although it may be possible to alter the salience of certain attributes, the ones emphasized in an advertisement are largely invariant. For instance, an advertisement for a disposable razor would almost necessarily stress the closeness of the razor's shave. This invariance is particularly true in mature markets where product dimensions have stabilized. In such situations it is more feasible to focus on linking this relatively fixed set of desirable product attributes to the brand that it is to alter the set of relevant attributes (Holbrook and Howard 1977). In terms of the conceptualization above, given a set of argument valences represented as the e_j components of the target beliefs in a persuasive message, the true challenge is to heighten the argument strength (i.e., b_j) associated with each target belief.

Discussions of the argument quality construct (e.g., Petty et al. 1981, 1983) seem implicitly to have focused on argument strength rather than argument valence in their use of adjectives like "cogent," "specious," "logical," and the like. However, it seems apparent from the preceding analysis that the evidence available to date on argument quality is based on manipulations of argument valence, making such interpretations risky at best. This is a particularly important point given the moderating role of

involvement in the ELM. The effects of argument valence and argument quality most likely are felt in different regions of the involvement continuum. It is of interest, therefore, to examine involvement manipulations in past ELM studies to see how they differ with respect to involvement.

FIGURE 2 POSSIBLE MANIPULATIONS OF ARGUMENT STRENGTH IN PETTY, ET AL. (1983)

POSITIVE ATTRIBUTE-STRONG ARGUMENT ADVANCED HONING METHOD CREATES UNSURPASSED SHARPNESS.

A recent scientific breakthrough allows the Edge blade to be honed more cleanly and smoothly than ever before. In fact, athletes such as Greg Norman and Chris Evert-Lloyd rated the Edge blade superior in sharpness to the Schick disposable, the Personna disposable, the Bic disposable and the Gillette Good News.

SPECIAL CHEMICALLY FORMULATED COATING ELIMINATES NICKS AND CUTS AND PREVENTS RUSTING.

This coating forms a chemical seal which actually bonds with the metal and protects it from elements which can ruin a blade's sharpness and finish. This coating is so effective that the Edge blade gave fewer nicks and cuts than all four of the leading competitors.

POSITIVE ATTRIBUTE-WEAK ARGUMENT ADVANCED HONING METHOD CREATES UNSURPASSED SHARPNESS.

A new production process makes the Edge blade better than the others. In fact, athletes such as Greg Norman and Chris Evert-Lloyd rated the Edge blade superior in sharpness to the Personna disposable blade - proof of its unsurpassed sharpness.

SPECIAL CHEMICALLY FORMULATED COATING ELIMINATES NICKS AND CUTS AND PREVENTS RUSTING.

This coating protects the blade from harmful elements - elements which can ruin a good blade. This coating is so effective that the Edge blade gave fewer nicks and cuts than two of the four leading competitors.

THE STUDY

In order to investigate empirically the distinction between argument strength and argument valence, an experiment was undertaken using message materials from Petty, et al. (1981, 1983). The basic hypothesis to be investigated was that the difference in average perceived argument valence (e_j) between strong and weak argument conditions in both studies is substantial, while the difference in average perceived argument strength (b_j) is not significant.

Method

Subjects. One-hundred twelve undergraduate students were recruited from an introductory marketing course. Subjects were given one extra credit point toward their final grade in return for their participation.

Design and procedure. A 2X2 (argument quality x message type) between-subjects factorial design was used. The strong and weak advertisements for the Edge disposable razor from the Petty, Cacioppo and Schumann (1983) study and the strong and weak editorials in favor of senior comprehensive examinations from the Petty, Cacioppo and Goldman (1981) study were placed in questionnaire booklets and administered in a classroom setting². The first page of the booklet was the same for all conditions so that subjects could not detect any differences as the booklets were distributed. All subjects first read two pages describing the purpose of the study and providing a cover story to introduce either the ad or the editorial. The subjects were asked to read carefully either the ad or the editorial. This was an attempt to hold involvement at a relatively high level so that any effect of the argument quality manipulation could be detected. To ensure that subjects did not merely skim through the treatments, subjects in the ad condition were told not to continue to the questionnaire until one minute passed. Subjects in the editorial condition were told not to continue until five minutes passed. Subjects then completed the portion of the questionnaire regarding the Fishbein and Ajzen attitude component measures. Following the measurement of these dependent variables, each subject read a scenario describing one of the involvement manipulations used by Petty, et al. (1981, p. 849; 1983, p. 139). They then completed a second portion of the questionnaire designed to measure how involved they would have been in that situation with processing the message they had read earlier.

Measures. Subjects in the ad conditions responded to a total of twelve 7-point bipolar scales representing b_i and e_j measures for each of six attributes mentioned in the ads. Six attributes resulted from the ads due to a compounding of rust prevention with nick and cut elimination in the "strong" ad and with floating in water in the "weak" ad. For measurement purposes, these two compound arguments were recast into single attribute arguments³. Subjects in the editorial conditions responded to 16 bipolar scales representing the b_i and e_j components of the eight key arguments in the editorial (as summarized by Petty, Harkins and Williams 1980, p. 87). All b_i measures were anchored by "likely" and "unlikely," while all e_j measures were anchored by "good" and "bad." The b_i and e_j scales were interspersed randomly, and scale endpoints were reversed randomly for half the items. The key dependent variables were constructed by computing each subject's mean b_i and e_j rating. The involvement measure consisted of five scales selected from Zaichkowsky's (1985) Personal Involvement Inventory⁴. Responses were averaged over the five 7-point scales.

² Appreciation is expressed to Richard Petty, who provided complete versions of the editorials.

³ A complete set of all measures is available from the authors.

⁴ The five scales were important/not important, exciting/unexciting, uninteresting/interesting,

Results

Two 2X2 between-subjects ANOVAs were conducted on the mean argument strength (b_i) and argument valence (e_j) ratings. Results are shown in Table 1. As expected, strong effects were observed for argument valence in both studies ($F=99.67$, $p<.0001$, $\hat{\Omega}^2=.66$; and $F=45.65$, $p<.0001$, $\hat{\Omega}^2=.46$, for ads and editorials, respectively). Neither study yielded a significant difference for argument strength ($F=.08$ and $F=.05$, both n.s., for ads and editorials, respectively).

Table 1
Means and Standard Deviations for
Argument Strength (AS) and Argument Valence (AV)

Message Type:	Message Strength	
	Weak	Strong
Advertisement	AS: 4.82 (0.95) AV: 4.50 (0.90)	AS: 4.74 (1.32) AV: 6.59 (0.49)
Editorial	AS: 4.82 (1.08) AV: 4.31 (0.70)	AS: 4.75 (1.04) AV: 5.72 (0.78)

The observed results are completely consistent with the conceptual arguments advanced above: argument quality, as operationalized, has manipulated only *argument valence* and not *argument strength*. The observed difference in argument valence was more pronounced (as measured by the estimated omega-squared statistic) for the advertising messages used in Petty, et al. (1983) than for the editorials used in Petty, et al. (1981). An additional 2X2 between subjects ANOVA was performed on the involvement measure. The two "low involvement" conditions showed means of 5.15 and 4.44, for the editorial and ad studies respectively; "high involvement" means for editorial and ad were, respectively, 5.64 and 5.19. This pattern of results indicates that the low involvement editorial condition was as involving for subjects as was the high involvement ad condition, complicating the interpretation of argument quality effects.

DISCUSSION

The above results suggest that the argument quality construct, as previously conceptualized and operationalized, can be decomposed into two underlying constructs, *argument strength* and *argument valence*. To date, evidence regarding the operation of argument quality within the ELM appears to be limited to the argument valence component. This possibility is not a great cause for concern, so long as persuasion researchers are cognizant of this interpretational issue.

The distinction between argument valence and strength is of special concern to persuasion researchers in the consumer behavior domain, where product attributes quite often assume the role of the arguments in the message (e.g., an ad). Conclusions regarding the efficacy of argument quality for highly involved consumers are not necessarily warranted under the present interpretation. For instance, if the advertiser has already

valuable/worthless, and not needed/needed. An index including all five items had an estimated reliability coefficient of .85.

identified correctly the most desirable (i.e., highly valenced) attributes of the product, then gains in argument quality can be achieved only by increases in argument strength. To date, no evidence has been mustered to demonstrate the argument strength exerts that effect within the context of the ELM. Thus, advertisers must be cautioned that they should not necessarily assume that they can achieve increases in persuasibility without resorting to false or misleading claims.

The pattern of the data suggests that previous ELM studies have manipulated argument valence rather than argument strength as conceptualized above. The distinction between the two constructs is particularly important because evaluative responses to argument valence differences may be generated much more easily and at a lower level of involvement than cognitive responses to differential argument strength. Involvement has been described as a mediator of cognitive effort, which in turn determines the degree to which central or peripheral processing of the persuasive message takes place (Petty, et al. 1983). The explanation offered here also relies on cognitive effort to explain the differential effect of argument valence and argument strength; specifically, it is possible that a manipulation of message valence affects attitude towards the object at a lower level of involvement than does a manipulation of argument strength. In fact, argument strength may produce an effect on attitude only at very high levels of involvement where the individual is willing to devote a substantial amount of cognitive effort processing the persuasive communication. While the above discussion represents speculation on the part of the authors, it does represent an interesting area for future research.

Although the involvement data must be interpreted cautiously, since they were gathered in a "role playing" situation, they suggest the possibility that the involvement manipulations used in ELM research have not tapped the extremes of the involvement continuum. If that interpretation is correct, then inferences about the impact of argument quality at the upper end of the continuum remain unclear. Continued monotonic increases in persuasion as shown in Figure 3a may be unlikely as recipients exert even more effort toward processing message content. Instead, the effects of argument valence may be diminished at higher levels of involvement (Figure 3b), unless argument strength is sufficient to make the claim credible. In other words, holding argument strength constant, there is an inverted U-shaped relationship between believability of the message (vertical axis) and argument valence (horizontal axis). Similarly, argument strength may exert little influence up to fairly moderate levels of involvement, due to the greater cognitive effort required to evaluate the logical merits of the message (i.e., an implicit syllogistic process). As shown in Figure 3c, the effects of argument strength might be expected at the very upper end of the involvement continuum, where it interacts with argument valence to influence the persuasibility of the message. The precise nature of the response functions characteristic of argument strength and valence remains an area needing further investigation.

CONCLUSION

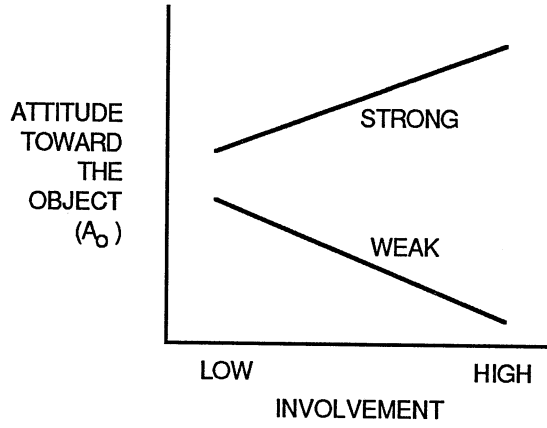
The present study introduced two constructs embedded within the argument quality construct. The hypothesis that argument strength operates at a higher level of involvement than does argument valence is an important one for two reasons. First, without an adequate conceptualization of the construct, there is the potential for "strong arguments" to come to mean "anything in a persuasive message that elicits a positive response" and "weak arguments" to mean "anything in a persuasive message that elicits a negative response." This conceptualization is not likely to advance knowledge of persuasion in the long run. Second, the above hypothesis is consistent with a global objective of "pulling apart" attitude effects along a central/peripheral processing continuum. Given the influence and appeal of the ELM, more detailed exploration of its underlying mechanisms is an appropriate objective for future research.

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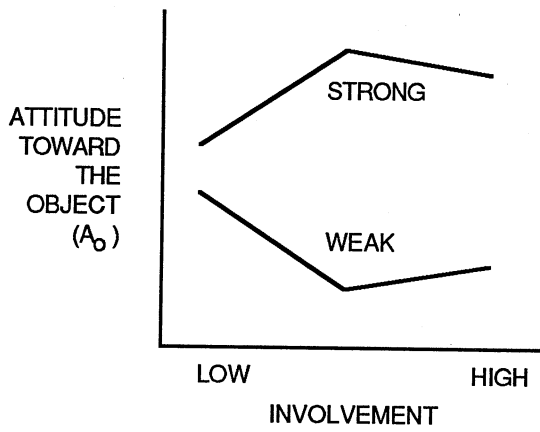
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FIGURE 3
THE RELATIONSHIP OF ARGUMENT QUALITY, VALENCE AND STRENGTH WITH INVOLVEMENT

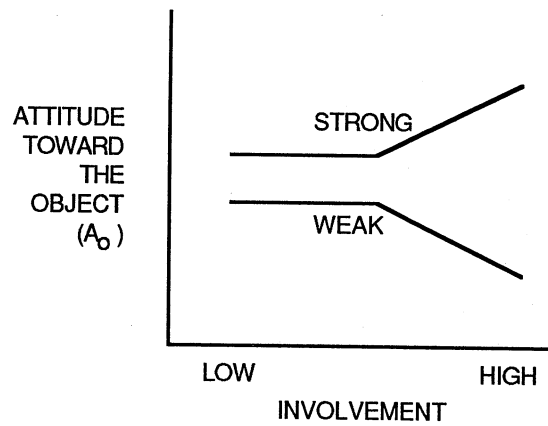
A.
ARGUMENT QUALITY



B.
ARGUMENT VALENCE



C.
ARGUMENT STRENGTH



- Petty, Richard E., John T. Cacioppo and David Schumann (1983), "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement," *Journal of Consumer Research*, Vol. 10, pp. 135-146.
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Some Central and Peripheral Thoughts on the Routes to Persuasion

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Abstract

Recent research on the persuasion process has suggested that the impact of central and peripheral message cues on preference formation will depend on the level of involvement during message processing. This paper discusses a number of conceptual and methodological issues relevant to future research in this area, with particular emphasis on the role played by peripheral cues.

Introduction

Few areas have drawn more attention from social researchers than the investigation of how communication variables affect the persuasion process. Studies examining the impact of source characteristics (e.g., credibility, attractiveness, expertise), message factors (e.g., type of appeal, argument quality and quantity, presence or absence of a conclusion), channel characteristics (e.g., print versus audio), and target factors (e.g., demographic and personality characteristics, level of involvement) must certainly number in the hundreds, if not thousands. Much of this early work could be aptly described as "main effects" research where the influence of some factor is examined in isolation. For example, a typical study might simply manipulate source expertise and observe the attendant effects. Whether the influence of a particular variable depends upon the presence of some other variable was rarely considered in this early research.

In contrast, the last decade or so has witnessed an explosion in research which has examined simultaneously two or more variables hypothesized to moderate the persuasion process. Of particular relevance here is the work of Petty and Cacioppo (Petty and Cacioppo 1981, 1984; Petty, Cacioppo, and Goldman 1981; Petty, Cacioppo, and Schumann 1983). They have proposed what they call the "central and peripheral routes" to persuasion. These two forms of message processing are discussed below.

Central and Peripheral Processing

Petty and Cacioppo argue that a communication can have a persuasive impact through one of two routes. Under the "central" route, post-communication attitudes are based on a careful and thoughtful consideration of the persuasive arguments contained in the message. Accordingly, post-communication attitudes should become more favorable as the message arguments increase in quality.

Alternatively, a "peripheral" route to persuasion may occur. This peripheral route does not involve diligent consideration of the message arguments. Rather, post-communication attitudes are simply based on peripheral cues that are associated with the message. These cues may take a number of forms such as the quantity (rather than quality) of message arguments, the source's attractiveness or credibility, and/or the type of music which accompanies the communication.

What determines which route to persuasion is likely to occur in a particular situation? According to

Petty and Cacioppo's elaboration likelihood model, the person's level of involvement during message processing is considered a critical factor. Specifically, as the message becomes more personally relevant to current and future attitudes and behavior (i.e., as involvement increases), people are increasingly motivated to expend the cognitive effort required to process the message arguments. Thus, when involvement is high, people follow the central route by basing their post-communication attitude primarily on their reactions to the message arguments. When involvement is low, however, people have less motivation to process the message arguments. Instead, they follow the peripheral route and rely more heavily on other message elements in forming their attitude.

In one study, Petty et al. (1983) examined the impact of central and peripheral cues within a print advertisement for a fictitious disposable razor. The research design involved manipulating subjects' involvement (high involvement subjects anticipated making a choice among several razor brands while low involvement subjects did not), argument quality (strong versus weak message claims about the product), and the message endorsers (celebrities versus average citizens). Highly motivated subjects were expected to expend the cognitive effort necessary to evaluate the message claims, while subjects uninvolved during message processing were not expected to devote much attention to the claims. Instead, their focus should be on the message endorser. Presumably, the focus of processing activity (source versus claims) should enhance the availability of certain stimuli at the expense of other stimuli. Consequently, source (claim) information should have a greater impact on attitude under low (high) involvement because of its greater availability. This expectation is consistent with the "availability-valence hypothesis" presented by Kisielius and Sternthal (1984, 1986) which predicts that subjects' attitudinal responses are based on the favorableness, or valence, of information available in memory when the judgment is rendered.

The results revealed that the argument quality manipulation had a strong impact on product evaluation under high involvement conditions and a weaker, but still significant, effect under low involvement conditions. In contrast, the endorser manipulation influenced product attitude only for those subjects less involved during message processing. Consequently, they concluded that:

The present study suggests that, although the informational content of an advertisement may be the most important determinant of product attitudes under some circumstances, in other circumstances such noncontent manipulations as the celebrity status (likeability) or credibility of the product endorsers may be even more important. (p. 143)

Unresolved Research Issues

Although the work of Petty and Cacioppo and others (Gorn 1982; Yalch and Elmore-Yalch 1984) is quite suggestive in its implications for persuasion strategy, there would appear to be a number of issues which require clarification. A recent ACR conference paper by Bitner and Obermiller (1985), which describes several limitations in the application of the central versus peripheral processing framework to consumer behavior, represents progress in this direction. In a similar vein, the remainder of this paper discusses both conceptual and methodological issues that future empirical endeavors may wish to address.

Lack of Support at the Process Level

What may come as a surprise is that data capturing the focus of message processing (e.g., cognitive responses) is extremely rare and, in those studies collecting such information, unresponsive. One would expect a greater number of cognitive responses directed toward peripheral (central) cues when subjects' processing involvement is low (high). Yalch and Elmore-Yalch (1984) did not find differences in source versus message oriented cognitive responses between conditions argued to influence central and peripheral processing. Petty et al. (1983) do not report such a comparison, although they do indicate that an index of total cognitive responses was unresponsive to the manipulations.

We believe process data is needed to clarify the relative focus on central and peripheral cues during message processing. Such data might reveal, for instance, whether central and peripheral processing are truly separate routes or merely different levels or stages of a single route. It may very well be that processing focuses initially on peripheral cues regardless of involvement level. Peripheral cues in the form of illustrations seem likely to dominate central cues during the initial stage of processing. Consequently, highly involved subjects may first travel the peripheral route but then proceed to a careful consideration of the message claims. Note that this possibility suggests that the number of cognitive responses reflecting peripheral processing may be quite similar across different levels of involvement. Conversely, even uninvolved subjects may engage in some amount of central processing (as suggested by the Petty et al. (1983) finding that an argument quality manipulation was influential under low involvement), although not to the same degree as those highly involved during message processing.

The classification of a cognitive response as representing central versus peripheral processing will not be an easy task. Simply classifying thoughts about the message claims as central and those involving nonclaim elements as peripheral is problematic. As Petty and Cacioppo (1986) point out, a stimulus can serve as both a central or peripheral cue depending on the nature of other factors within the persuasion setting. Similarly, some thoughts about the claims may represent central processing (e.g., "this brand works better than my current brand") while others may reflect peripheral processing (e.g., "the ad is too wordy"). Thus, the strength of any categorization system will depend on its ability to reflect differences in issue relevant thinking.

A possible alternative (or compliment) to process data involves the assessment of subjects' evaluations of the central and peripheral cues. For example, one could measure subjects' attitudes toward the message arguments

and source. Based upon Tesser's (1978) attitude polarization findings (i.e., that attitudes become more polarized as the time subjects spend thinking about the attitude object increases), one might hypothesize a similar polarization for attitudes toward the cues. Specifically, if subjects spend more time thinking about the message claims under high involvement, then their attitudes toward the claims should be more polarized relative to low involvement. In contrast, attitudes toward the source should be more polarized under low involvement conditions.

The amount of attention devoted to peripheral cues during high involvement processing may also carry potent pragmatic implications. According to the previously mentioned availability-valence hypothesis, when processing encompasses not only the message claims but peripheral cues as well, post-communication attitude should suffer if peripheral cues elicit thoughts that are less favorable about the product than those generated by the claims. Kisielius and Sternthal (1984) report that peripheral cues in the form of crude pictures had an adverse impact on attitude, although Dickson, Burnkrant, Miniard, and Unnava (1986) found just the opposite result. This concern could be easily accommodated within the research design employed by Petty et al. (1983) by including a treatment in which the message is devoid of the endorser's picture. The availability-valence hypothesis would predict that attitude should be most favorable when the picture is absent (assuming of course that the claims generate more favorable thoughts than those initiated by the picture). Interestingly, if the message was constructed to contain arguments so weak that they lowered evaluation, then just the opposite effect should hold as attitude should be most favorable when the picture of the endorser is present.

Estimating the Relative Influence of Central and Peripheral Cues

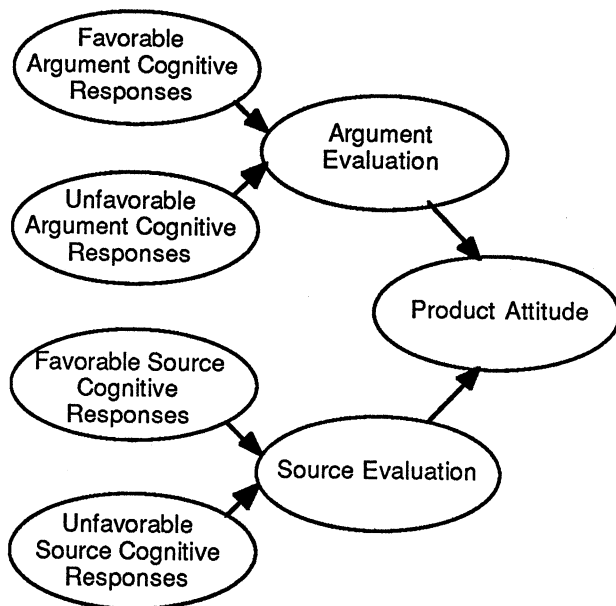
As previously noted, Petty et al. (1983) suggest that central cues are the most important determinant of product attitude during high involvement processing, while peripheral cues are more important during low involvement processing. This interpretation would seem more reasonable if, under low involvement conditions, the source manipulation had an effect and the argument quality manipulation, while influential under high involvement processing, was unimportant. This was not the case, however, as low involvement subjects were affected by both manipulations. One might then be tempted to rely on the variation explained by each manipulation. However, this approach is suspect since the strength of a manipulation can be easily influenced by the levels of the treatment conditions. One could construct a powerful source manipulation (e.g., a moron versus a genius) but a weak argument quality manipulation (e.g., a one year guarantee versus a 366 day guarantee).

The lack of a "control" condition in which a particular central or peripheral cue is absent from the advertisement also compromises the inferential power of their experimental design. It is important to consider that the cue is always present in the treatment conditions comprising the cue manipulation, but differs in its anticipated persuasiveness (e.g., weak versus strong arguments). The fact that some cue manipulation as currently operationalized fails to have an effect does not necessarily mean that the cue was unimportant in

preference formation. It may be that the simple presence of a cue, regardless of its specific content or form, may be sufficient for it to exert an influence. For example, highly uninvolved subjects, while unwilling to exert the effort to carefully consider message claims, may respond more favorably to an ad simply because it contains claims that have some value or meaningfulness. In this instance, a manipulation of simply weak versus strong claims would suggest that the claims were "unimportant." However, comparisons with a control group in which any message claims were absent might reveal that both weak and strong claims conditions produced higher product evaluations, thus revealing the previously obscured impact of this cue.

An alternative approach to assessing the impact of central and peripheral advertising cues would involve directly measuring subjects' evaluations of these cues. For example, one could measure subjects' perceptions of argument quality and source attractiveness. A causal model could then be constructed in which favorable and unfavorable cognitive responses would act as determinants of these central and peripheral cue evaluations, which in turn serve as antecedents of product attitude (see Figure 1). This would provide a simple and direct test of the relative impact of these cues. Support for the contention that peripheral cues dominate under low involvement would require that the path estimate between peripheral cue evaluation and product attitude be greater than the estimate for the central cue evaluation - product attitude path. Just the opposite pattern should occur under high involvement settings.

Figure 1
A Proposed Causal Model



An advantage of a causal modeling approach is that it helps eliminate a problem common to experimental research. As discussed by Lutz (1977), subjects' idiosyncratic reactions to the experimental treatment (e.g., some view the endorser as highly attractive while others hold a less favorable perception) are treated as error variance within an experimental paradigm. These variations in subjects' responses to a

treatment, however, are quite meaningful and can be better represented through their direct assessment as nonerror variance within the causal model paradigm.

An added benefit of this causal modeling approach is that it can allow us to extend the inquiry of central and peripheral cue effects into the "attitude toward the ad" research domain (Gardner 1985; MacKenzie, Lutz, and Belch 1986; Mitchell and Olson 1981; Park and Young 1986). Research on advertisement attitudes has focused primarily on the unique influence of attitude toward the ad on affective product attitude beyond that exerted by cognitive product attitude. Researchers have only begun to examine the impact of various message elements on attitude toward the ad (e.g., Mitchell 1986). The replacement of product attitude with attitude toward the ad in Figure 1 would allow an examination of central and peripheral cues' influence on ad attitude. Consistent with those effects anticipated for product attitude, argument evaluation should exert a greater impact on attitude toward the ad under high involvement while source evaluation should be more influential under low involvement.

Peripheral Effects: Do They Matter?

Consider the subject in a low involvement condition who, after being exposed to an irrelevant persuasive stimulus for a product (in the sense that the subject does not anticipate having to make a decision about the product in the immediate future), is required to make some attitudinal or choice judgment. Importantly, subjects are not allowed the opportunity of acquiring new information prior to rendering their judgment. It is under such conditions that peripheral cues have been reported to be more influential than message content.

Yet in actual choice environments consumers typically have the very real option of gathering further information prior to making their decision (e.g., from packaging at the point of purchase). This is not to say that consumers will always exercise this option. Indeed, decision making may often occur without prior external search (Olshavsky and Granbois 1979). However, in those instances where consumers do acquire product information, the question becomes whether prior preferences induced by the peripheral route have any impact on choice behavior. It may well be that preferences formed during low involvement by peripheral message cues are completely over-ridden by preferences formed when processing product information during high involvement (i.e., in anticipation of making a choice). If this were the case, the value of creating persuasive messages geared for low involvement processing would be undermined. An unresolved issue, then, is the incremental or residual effect of preferences developed during low involvement when the person enters a decision making process and collects additional information relevant to the impending choice.

We hypothesize that consumers' choice behavior will typically be based on their reactions to product information processed during high involvement rather than by their reactions to peripheral stimuli processed under low involvement. However, in some circumstances the peripheral route may still be influential. When available product information fails to differentiate the alternatives (e.g., alternatives are equally attractive or unattractive), choice may then be based on peripheral cues. Bitner and Obermiller (1985) have also raised this possibility.

A simple modification of the typical experimental paradigm to include additional choice-relevant information would permit a test of this issue. Specifically, subjects could be exposed to an advertisement involving a fictitious new brand under conditions where they do not anticipate initially making a decision about the product. This ad could employ a peripheral cue as the basis for creating product preference. After exposure to the ad, subjects would be informed that they must make a choice between the "advertised" brand and several alternative brands. Next, information would be provided about the advertised and alternative brands on a number of important product attributes. Subjects would then make their choice. In order to determine whether initial preferences formed through the ad using peripheral cues have any "carry-over" effect on choice behavior, it is of course necessary to establish a baseline for comparison purposes. Thus, a second treatment condition could parallel the prior condition with the single exception that the peripheral cue is excluded from the ad. A comparison of how many subjects select the critical brand when it is or is not accompanied by an ad using a peripheral cue would reveal the role played by peripheral-based preferences formed during low involvement in choice settings where additional information is considered following activation of the decision process. Furthermore, because we anticipate that the nature of the product information is an important determinant of a peripheral cue's influence, this factor should also be manipulated. For example, half of the subjects could be exposed to a set of product ratings that clearly differentiates the choice alternatives, whereas the remaining subjects would receive a set of ratings indicating the choice alternatives are equivalent.

A test of the above concerns would require a 2x2 factorial design. The first factor would manipulate the presence or absence of a peripheral cue within an advertisement for one of the choice alternatives. The second factor would vary the nature of the product information. Support for our hypothesis would require a significant interaction between these two factors. Specifically, subject's choice behavior should be affected by the peripheral cue only when the product information fails to differentiate the choice alternatives. In this instance, subjects should rely on the peripheral cue to make what would otherwise be a "random" choice (since the alternatives are equally attractive in terms of attribute performance characteristics). However, when the product information does differentiate the alternatives, subjects' choice behavior is predicted to be based solely on this information and thus unaffected by the peripheral cue. Substantiation of this interaction hypothesis would limit the value of peripheral persuasion to settings where consumers (1) rely on peripheral-based preferences rather than acquire new information and (2) engage in search but are unable to make a choice based on this new information. Research efforts might then begin to focus on understanding when consumers will base their decisions on peripheral-based preferences and forego search.

Attitude Formation versus Attitude Change

Another issue requiring examination is the generalizability of current research, which has compared the central and peripheral routes under attitude formation conditions, to settings involving attitude change. Prior investigations in this area share a common procedure of using a fictitious rather than real product (an exception is

the Yalch and Elmore-Yalch 1984 study). Consequently, subjects lack an "initial" attitude toward the product and the effects of central and peripheral cues are best viewed as occurring under conditions where subjects are forming an attitude toward this new product. Demonstration of the generalizability of present findings to situations involving attitude change would require replicating these results using a real product toward which subjects hold an initial attitude. Although Kahle and Homer (1985) have recently argued that the theory and effects hold for both attitude formation and change situations, we are skeptical that the observed impact of peripheral cues under low involvement would replicate in attitude change settings. It is one thing to show that manipulating some peripheral cue will influence preference in the absence of an initial attitude. It is quite another to demonstrate that this same manipulation will be influential when it must interact with existing cognitive schema of varying complexities and "overcome" the resistance to change that typically accompanies an existing attitude. Let us illustrate this concern through an example. The present evidence suggests that a manipulation of some peripheral cue (e.g., source attractiveness) may be more potent than a manipulation of some central cue (e.g., argument quality) when subjects are uninvolved during message processing and are unfamiliar (i.e., they do not possess an initial attitude) with the product. Suppose we were to change the topic from an unfamiliar product to a highly familiar and important issue such as abortion. To the extent people hold strong convictions about abortion, we doubt whether these initial convictions would be affected by the presence of an attractive or unattractive source. Indeed, it is very difficult to change strongly held attitudes through the use of well reasoned arguments that strike at the foundations of such attitudes, let alone through cues which, by definition, are peripheral to the issue at hand.

Because peripheral cues "compete" not only with central cues for determining the post-communication attitude in attitude formation situations, but must also compete with an initial attitude in attitude change settings, we expect that the impact of such cues will differ across formation and change situations. Consequently, the potential superiority of peripheral cues over central cues may be limited to attitude formation settings. Future research might explore this prediction by manipulating not only central and peripheral advertising elements, but also whether the advertised brand is new versus a brand toward which subjects possess a pre-existing attitude.

Conclusion

Research on the persuasive impact of central and peripheral cues and how this may depend on the intensity and focus of message processing is still in its infancy. This paper has identified some conceptual and methodological considerations that may help guide efforts in this area. In particular, we suggest that future research consider: (1) collecting data to establish the hypothesized process underlying the central and peripheral routes, (2) the use of a causal modeling approach to estimating the influence of central and peripheral cues, (3) examining the impact on choice behavior of preferences formed by peripheral cues during low involvement when followed by more involving information processing, and (4) testing for potential differences in peripheral persuasion between attitude

change and formation conditions. Efforts along these lines may be useful in delineating the conceptual and pragmatic boundaries of the central and peripheral routes to persuasion.

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Personality and Ad Effectiveness: Exploring the Utility of Need for Cognition

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Abstract

Two studies are briefly described to demonstrate how the personality variable of need for cognition--a measure of an individual's chronic tendency to enjoy thinking--may be useful in understanding how advertisements may influence the formation of attitudes toward a consumer product. Results from Experiment I showed that individuals high in need for cognition were more influenced by the quality of arguments contained in an ad than were individuals low in need for cognition. Results from Experiment II showed that individuals low in need for cognition were more influenced by the peripheral cue of endorser attractiveness than were individuals high in need for cognition. Implications for the conceptualization and use of personality variables in consumer behavior research are discussed.

Introduction

The utility of personality variables for understanding consumer behavior has been considered disappointing. In a review of dozens of studies and papers that have addressed the role of personality in consumer behavior, Kassarian and Sheffet (1981) concluded that the research was equivocal. A partial explanation of why research on personality variables may have fared so poorly. A central criticism was that personality research in consumer behavior tended to employ shot-gun like approaches in which predictions were often based on few or no specific hypotheses or theoretical frameworks.

The purpose of the present paper is to describe how a relatively new personality variable--need for cognition (a measure of an individual's chronic tendency to engage in and enjoy thinking)--may be an aid to understanding how individual differences can systematically influence the processing of advertising stimuli and the formation of product attitudes. In addition, we show how the individual difference variable of need for cognition (NC) fits into an overall conceptualization of attitude change processes--the Elaboration Likelihood Model of Persuasion.

Cacioppo and Petty (1982) proposed that just as there are situational differences which enhance or decrease the motivation of persons to engage in issue-relevant thinking when forming attitudes (e.g., personal relevance) so too could there be individual differences in chronic tendencies to engage in issue-relevant thought when exposed to persuasive appeals. Cacioppo and Petty (1982) sought a personality variable that closely mirrored the kinds of processes caused by situational inductions of motivation to think. In addition to the practical utility of such a variable, they saw the use of a dispositional variable as providing a stronger test of hypotheses in experiments designed to assess the importance of issue-relevant thinking in attitude change and attitude-behavior correspondence research.

Taking the lead from some early research conducted by Cohen and his colleagues (Cohen, Stotland, and Wolfe, 1955), and unable to find an existing personality variable that was a specific

operationalization of the theoretical construct they sought, Cacioppo and Petty (1982) devised a measure of an individual's natural tendency to engage in and enjoy effortful cognitive activities. Items on the NC scale ask individuals to rate the degree to which they consider statements to be characteristic or uncharacteristic of themselves (e.g., I really enjoy a task that involves coming up with new solutions; I usually end up deliberating about issues even when they do not affect me personally).

Scale issues. The NC scale has been validated using a number of techniques in a variety of studies. Cacioppo and Petty (1982), for example, conducted a study in which subjects performed either a simple or complex number circling task for 10 minutes. The simple task involved circling all 1s, 5s, and 7s in a random number table. The complex task involved circling all the 3's, any 6 that preceded a 7, and every other 4. Analysis of responses to questions regarding subjective enjoyment or preference for the tasks revealed a significant task by NC interaction. Individuals scoring above the median on the need for cognition scale preferred the complex task over the simple task, whereas individuals scoring below the median on the Ncog scale preferred the simple task over the complex task.

Importantly, adding to the validity of the NC construct, research has also shown that individuals high in NC are more intrinsically motivated to engage in effortful cognitive analyses than are individuals low in NC. For example, research has shown that, in general, individuals put less effort into a task when they share responsibility for the outcome as part of a group than when they are individually responsible (Ingham, Levinger, Graves, and Peckham, 1974). This effect, which has been dubbed social loafing (Latane, Williams and Harkins, 1979) is equally evident in cognitive (Harkins and Petty, 1982), attitudinal (Petty, Harkins, and Williams, 1980), and physical tasks (Williams, Harkins, and Latane, 1980). To test the intrinsic motivation aspect of the NC construct, Petty, Cacioppo, and Kasmer (1985) asked subjects to perform a brainstorming task (generating uses for objects) after they were led to believe that they were individually responsible or part of a group that was responsible for performing the task. Results of the study showed that individuals scoring high in NC, were *less* likely to loaf on *cognitive* (brainstorming) tasks under group conditions. High NC individuals generated equally high numbers of ideas regardless of the social condition. Importantly, adding to the discriminant validity of need for cognition construct, a separate study demonstrated that individuals high in NC were just as likely as individuals low in NC to loaf on physical tasks--such as fastening and unfastening nuts and bolts--when working in a group (Petty, et al 1985).

Based on the above studies, and others too numerous to mention here (e.g., Srull, Lichenstein and Rothbart, 1985; Ahlering and McClure, 1985; Sidera, 1983; Cacioppo, Petty, and Kao, 1984; Cacioppo, Petty, Kao, and Rodriguez, 1986; Furguson, Chung, and

Weigold, 1985) the NC scale appears to be reliable and valid. We now turn to a discussion of how this individual difference construct fits in an overall framework of persuasion.

The Elaboration Likelihood Model

Petty and Cacioppo (1981, 1986) outlined a general framework for organizing, categorizing and understanding the effectiveness of persuasive communications. According to their framework--the Elaboration Likelihood Model--persuasion can be characterized as the result of the relative operation of one of two distinct routes to persuasion. Specifically, it has been suggested that one route to persuasion--the central route--occurs following an individual's careful and thoughtful consideration of arguments presented in support of a position. If message arguments are found to be strong--that is, producing relatively more positive than negative issue-relevant thoughts--attitude change would occur. If the message arguments are found to be weak, no attitude change or attitude change in the opposite direction (i.e., boomerang) may occur. Research on the model has shown that in order for change under this central route to take place, individuals need to possess both the ability and motivation to effortfully evaluate message arguments (see Petty and Cacioppo, 1986 for a complete review). On the other hand, research has also shown that persuasion can occur in situations where individuals lack the ability or motivation to extensively evaluate message arguments. In situations where ability and/or motivation to process a message are low, persuasion may be the result of peripheral persuasion cues. That is, the presence of a simple associative cue in the persuasion context (e.g., pleasant music, attractive sources, etc.) may induce attitude change without scrutiny of arguments central to the merits of the issue.

A number of studies have shown that situational factors such as the personal relevance of an issue or external distractions can influence the extent of message processing and thus, the route to persuasion. For example, Petty, Cacioppo and Goldman (1981) presented subjects with a counterattitudinal advocacy containing either strong or weak arguments presented either by an expert or nonexpert source. Some subjects were led to believe that the recommendation in the advocacy would affect them personally and others were led to believe that it would not. Results of the study revealed that message quality was a more important determinant of postcommunication attitudes for subjects who believed the recommendation was personally important than for subjects who believed it was personally unimportant. On the other hand, source credibility was a more important determinant of postcommunication attitudes for subjects who believed the message was personally unimportant than for subjects who believed that the message was personally important.

The following experiments are described here as examples of how a personality variable might be used in a manner similar to situational manipulations to examine the impact of message arguments and peripheral cues on the formation of attitudes. Experiment I demonstrates the effect of the quality of the arguments contained in an ad on the attitudes formed by individuals low vs. high in NC. Experiment II demonstrates the influence of peripheral cues contained in an ad on the attitudes formed by individuals low vs. high in NC.

Need for Cognition and Argument Processing

Drawing on the previous research on the effects of personal relevance (e.g., Petty, Cacioppo, and Goldman, 1981), it was predicted that individuals high in NC would have favorable attitudes toward a product after exposure to an advertisement containing strong arguments and relatively unfavorable attitudes toward a product after exposure to an advertisement containing weak arguments. On the other hand, it was predicted that, compared to the high NC individuals, individuals low in NC should be less affected by a manipulation of argument quality.

To test our hypotheses we exposed undergraduate subjects to slide presentations of one series of eight ads for a variety unknown brands of products. Within the group of ads, half of the subjects were exposed to an ad for a typewriter containing strong arguments (determined via pretesting) and half of the subjects were exposed to the same ad containing weak arguments. As part of the "ad rating forms" completed at the end of the session, subjects were asked to express their attitudes toward the product on two nine point bipolar scales (eg., unfavorable/favorable; unsatisfactory/satisfactory). Subjects completed the NC scale at the end of the session.

A 2 (high vs. low NC) X 2 (strong vs. weak arguments) between subjects ANOVA revealed the predicted interaction $F(1,124) = 5.83, P < .02$. The quality of product attribute information contained in the ad was a more important determinant of the attitudes formed by individuals high in NC than for individuals low NC. Individuals categorized as high in NC (via a median split) had significantly more favorable attitudes toward the product (a fictitious typewriter) when the ad contained strong attribute information than when it contained weak attribute information. The attitudes of individuals low in NC were relatively unaffected by the quality of the arguments. It should be noted that the results of Experiment I nicely parallel the findings of a study reported by Cacioppo, Petty, and Morris (1983) on the effects of NC and argument quality despite some important differences in stimuli and methodology¹.

The results of Experiment I show that, similar to the effect of high personal relevance observed in other studies (e.g., Petty and Cacioppo, 1979; Petty, Cacioppo, and Schumann, 1983), individuals high in NC are more influenced by the quality of arguments for a product contained in an ad than are individuals low in NC. As indicated in the discussion of the ELM above, the central route to attitude change is more likely under conditions of high motivation to effortfully evaluate message arguments. As shown in previous research, and Experiment I, the quality of arguments are a crucial determinant of attitudes under conditions of relatively high motivation.

Need for Cognition and Peripheral Cues

A great deal of research in consumer behavior and social psychology suggests that individuals are not

¹ Cacioppo, Petty, and Morris (1983) had subjects read a 300 word proposal about issues very relevant to the participants (eg., raising tuition or instituting senior comprehensive exams on their own campus). In contrast, subjects in the present study were exposed to a number of ads for consumer products under conditions of ambiguous relevance for only a brief period of time (15 seconds per ad).

always willing or able to effortfully evaluate message arguments and product attributes (See Fiske and Taylor, 1984; Bettman, 1986; Cialdini, 1985; Petty and Cacioppo, 1981 for reviews). For the present purposes, given the guidance of the ELM, a crucial question pertains to understanding or predicting aspects of a persuasive appeal that are most likely to be important influences in attitude formation under different kinds of situational conditions or for different kinds of individuals. Previous research gives us some indication of the interaction of personal relevance and peripheral cues. For example, Petty, Cacioppo, and Schumann (1983) have shown that the peripheral cue of celebrity endorsement had the greatest impact under conditions of low personal relevance. Again, because of the conceptual relationship between NC and the processes thought to take place under conditions of different levels of motivation to process, in our second study we hypothesized that individuals low in NC would be more influenced by cues peripheral to the actual merit of a product than individuals high in NC.

Our second study is very similar in design to Experiment I. Important differences pertain to the nature of the advertisement. In Experiment I the quality of arguments was manipulated and the attractiveness of the endorsers remained constant. In Experiment II, the quality of arguments remained constant and the attractiveness of the endorsers varied. In the negative cue version, the ad contained the pictures and product endorsement of two relatively unattractive females (assessed via pretesting) depicted as Vo Tech students. In the positive cue version, the ad contained pictures and endorsement of two relatively attractive females depicted as university students.

A 2 (high vs. low NC) X 2 (attractive vs. unattractive endorsers) between subjects ANOVA revealed the predicted interaction, $F(1,105) = 5.24, P < .02$. Individuals low in NC expressed significantly more favorable attitudes toward the product (the typewriter) when it was associated with attractive endorsers than when it was associated with unattractive endorsers. The attitudes of individuals high in NC were uninfluenced by the cue of endorser attractiveness.

Conclusions

The results of this research suggest that some kinds of consumers--those high in NC--may be relatively unaffected by irrelevant aspects of the context in which an advertisement is placed or by cues such as celebrity endorsements. Instead, for these individuals, the most important part of an advertisement may be the product-relevant information. On the other hand, for other consumers--those low in NC--factors like celebrity endorsements or the endorsement of attractive people may be quite important features of an advertisement.

Based on the examples provided by the above studies, it appears that the dispositional variable of NC influences the attitude formation process in a manner similar to the situational variables affecting motivation to think. As such, it can be considered an alternative way to operationalize the construct of "motivation to effortfully examine information." As an alternative operationalization, the NC variable may be especially useful in broadening the theoretical and applied domain of approaches such as Petty and Cacioppo's (1986) Elaboration Likelihood Model of Persuasion.

We believe that the NC construct is a potentially interesting and useful one for the field of consumer

behavior. In applied settings, segmenting markets on the basis of NC scores may allow for different and more effective advertising. For example, low NC individuals may require more repetitions before an ad exerts its maximal attitudinal effect whereas high NC individuals may require fewer repetitions, but longer and more informationally dense advertisements. Recent research suggests that individuals high in NC may rely on different media for news and information than low NC individuals. In one study, for example, high NC reported relying more on newspapers and magazines for news and reported watching less television than did individuals low in NC (Ferguson et. al. 1985). In addition, the ELM suggests that the attitudes formed by the two groups of individuals may be very different with regard to their persistence (ability to last over time) and resistance (ability to maintain in the face of attacks from competing ads), and attitude-behavior consistency (see Petty and Cacioppo, 1986).

Finally, we believe that the individual difference variable of NC provides an example of the utility of a personality variable in consumer behavior research when its conception and operationalization is compatible with a useful theory of persuasion. With such an approach, precise, interesting, and important predictions about the influence of variables contained in persuasive appeals on the formation of attitudes can be made. Used in combination with situational variables, researchers are in a better position to understand the general principles that may underlie the effectiveness of advertisements.

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Television Program Elaboration Effects on Commercial Processing

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Abstract

While some prior studies on the effect of involvement in a television program suggest that it results in lower recall of commercial messages, results have been inconsistent and have failed to demonstrate the responsible cognitive mechanism. Using a sensitive response time measure, two experiments demonstrate within-program differences in viewer elaboration levels and provide evidence of hypothesized decreases in recall and persuasion, along with an unanticipated increase in commercial-relevant thought, as the level of program-relevant thought increases.

Introduction

A television commercial interrupts the impending demise of a valiant crime fighter, a time out on the one-yard line in a critical football game, or a highly involving news report. These scenarios are not uncommon in the environment which confronts the viewer of contemporary television programming. However, their desirability and effects on the processing of commercial messages are unclear and subject to some debate. On the one hand, it is suggested that commercial breaks at points where the audience is devoting a great deal of attention to the program are desirable because this high attention level will be likely to carry over to the ad or ads shown during the commercial break (Krugman 1983). On the other hand, it is argued that commercial breaks at points in a program where the audience is particularly involved in programming content will be detrimental because the ongoing processing of program content during the commercial break will interfere with and detract from processing of the commercial message (Soldow and Principe 1981).

The objectives of this research are to establish whether it is beneficial or detrimental to insert commercials at highly involving points in television programming, and to identify cognitive processes which account for the observed effects. Following a brief review of relevant literature, hypotheses are generated regarding these issues, a research methodology designed to test these hypotheses is explained, and results obtained from this research are presented along with a discussion of their implications.

Literature Review

A variety of contextual factors have come under scrutiny in an effort to explain the impact of programming on the processing of television commercials. Early studies sought explanation of context effects exclusively within the program environment, manipulating such factors as temporal placement of commercials and different types of programming without regard to how those manipulations affected viewers' cognitive processes (e.g., Barclay, Doub and McMurtrey 1965, Steiner 1966, Gruber 1966). These efforts demonstrated a sufficient quantity of significant differences in viewer recall on the basis of commercial positioning to document the occurrence of program context effects; but inconsistent findings and the lack of an explanatory theoretical base pointed to the need for

the manipulation and/or measurement of cognitive factors.

Kennedy (1971) treated program context effects on the processing of commercials as a function of "drive for closure." A suspense program, he hypothesized, would result in a stronger drive for closure with respect to the plot than would a situation comedy. This drive for closure would then increase "noise" which would affect "both perception of commercial material and its integration into memory." Consistent with that hypothesis, he found higher brand recall scores for subjects who viewed the test commercials in a comedy setting than for those who saw the suspense thriller.

Soldow and Principe (1981) also found that recall was higher for a commercial shown in a family situation comedy than in a suspense program, and they found that subjects reported being more involved in the suspense program than in the comedy. While the authors implicate involvement as the factor causing the obtained effects, the two programs differed in so many ways that their conclusion is open to question.

Stronger evidence is provided by Bryant and Comisky (1978), who examined the effect on commercial recall of placing advertisements within differentially cognitively involving portions of a single television program. They found that commercial recall varied inversely with program involvement, and this effect was obtained on both an immediate and a delayed recall test.

More recently, Thorson, Reeves, Schleuder, Lang and Rothschild (1984) used an EEG measure of cortical arousal to measure program involvement and found low-involvement programming to elicit higher levels of recall for commercials than high-involvement programming. The implications of the latter finding are less clear than would be desirable because Thorson et al. used very different types of programs (comedy, violence, sex) and also varied commercial position (first, second, third).

Krugman (1983) examined program involvement effects, employing General Electric's quarterly national surveys as a data base. He categorized as "low involvement" those GE-sponsored programs where commercials were likely to occur during a natural break, and as "high involvement" those where he anticipated commercial breaks might interrupt an action segment. Using attitude as a dependent measure, he found higher levels of corporate attitudinal responses associated with the "interrupted context" programs than with "natural break" contexts. However, this result is also problematic, given that Krugman reports no attempt to validate the assumption of interrupted versus natural-break contexts, determine whether respondents exposed to the programs were also exposed to the relevant ads, ascertain viewer perceptions of program involvement levels, or control for within-program involvement variance.

In summary, there is some evidence (though it is not always consistent, as suggested by the discrepant Krugman result) that "high involvement" in a program has a detrimental effect on the processing of commercial messages, as measured by recall. However, it is not at all clear what the effects of program involvement are, if

any, on cognitive responses people make to or as a consequence of exposure to commercial messages. Recall has frequently been found to be unrelated to cognitive response and other more persuasion-oriented variables (e.g., Petty, Cacioppo and Heesacker 1981; Petty, Cacioppo and Schumann 1983). Furthermore, some evidence suggests that programming involvement may have a favorable effect on persuasion. We have found no studies which have explicitly measured the effects of program involvement on the cognitive processing of commercial messages.

Processing Motivation and Ability

Central to an understanding of program context effects on the processing of television commercials is a recognition that consumers must possess both the motivation and ability to process a given message if it is to be effective (Batra and Ray 1986). From a cognitive response perspective (Greenwald 1968), a television viewer who is elaborating upon program content may be expected to enter a commercial break rehearsing the sequence which has just disappeared from the screen, anticipating its resolution, relating it to personal experiences or similar programs, or evaluating the program. Any such ongoing program-relevant cognitive responses occurring simultaneously with exposure to the commercial message may preclude the viewer's allocating full cognitive capacity to the processing of the advertisement (Greenwald and Leavitt 1984). Hence the information conveyed in the commercial may not be as thoroughly elaborated or as readily stored in memory. Consequently, it may not be as available for later retrieval as when the same message is positioned within a program segment less prone to viewer elaboration.

The above projection of impeded commercial processing ability assumes that program elaboration consumes most available cognitive resources. That assumption seems reasonable in view of the limitations typically ascribed to cognitive capacity. (Miller, 1956, placed the size limitation of working memory at about seven pieces of information; others restrict it to three or four -- e.g., Simon 1974.) By such reasoning, the lower commercial recall associated with "high involvement" program segments in prior studies may be attributable to viewers' inability to effectively process the message because of the lack of cognitive resource availability. In addition to the overall level or intensity of processing, such a restriction on cognitive capacity may affect the types of commercial elements the viewer is able to recall and the nature of the message-relevant thoughts generated.

An alternative perspective holds that the amount of capacity available varies with the level of arousal, such that more capacity is available when arousal is moderately high than when it is low (Kahneman 1973). When a commercial is presented in a highly involving position in a program, it reaches the audience when its attention level is high. This high attention level may carry over to the commercial, producing greater learning of message content. This position would suggest that it would be most desirable to have commercials at points of high program involvement.

Hypotheses

This research examines the effects of programming involvement on the recall, cognitive response and attitudinal effects of commercial messages.

It is hypothesized, first, that points within a television program may be located that engage the audience in significantly different amounts of elaboration. This finding would support the results obtained by Bryant and Comisky (1978), increase their generalizability and provide a basis for development of an experimental design that permits placement of commercials at points in a program differing significantly in the extent to which they induce the audience to engage in program elaboration.

The second hypothesis is that ads, as they are currently placed in television programs, occur at points that differ significantly in terms of program elaboration. No prior research has shown this, and it might be argued as an alternative that programmers naturally incorporate a break in the action at commercial locations. If commercials are found to be in positions varying in terms of elaboration, placement decisions may unknowingly penalize some commercials and help others.

Relative to the change in elaboration levels as a commercial break begins, the third hypothesis is that an increase will be observed when program elaboration is low (indicating the availability of sufficient cognitive resources for the processing of the advertisement in addition to whatever minimal program elaboration is occurring), but that no such increase will occur in a high program-elaboration position (suggesting that the viewer is operating at or near capacity limits).

It is predicted, as hypothesis four, that an inverse relationship will be obtained between recall of the advertisement and pre-commercial elaboration, as measured by the secondary task. The inverse relationship will support prior research showing less recall when commercials are shown in highly involving program segments than when they are in segments that are not very involving.

Relationships between elaboration and cognitive response and attitude measures will also be examined in this research. These efforts are not hypothesized, due to a lack of a research base on which to develop strong hypotheses.

Methods

The secondary task technique is used to measure the amount of program elaboration subjects engage in as they are exposed to the program. This technique involves recording the time it takes subjects to push a button in response to an audio stimulus. For these experiments, tones were randomly distributed throughout television programs at three- to nine-second intervals, thus providing a continuous response time measure across the programs. While viewers watched, they pushed a button whenever a beep occurred to acknowledge that they had heard the tone. This response to the beep was the secondary task; the primary task was watching the television program.

A wide variety of cognitive tasks have come under scrutiny through the use of this secondary-task technique (reviewed in Kahneman 1973; Kerr 1973; Norman and Bobrow 1975, 1976; Posner 1978; Britton 1980; Reeves and Thorson 1986). In each instance, longer response times have been interpreted as indicating the increased use of cognitive capacity for the primary task. Thus, in this instance, the time it takes to respond to the secondary task becomes a measure of the cognitive elaboration directed at the television program.

The secondary task technique also permits the researcher to measure, on an individual basis, the amount of elaboration engaged in by people before, during and after exposure to a commercial. It is unlikely that as the electronic image changes from a program to a commercial stimulus, a viewer will immediately stop thinking about a highly engaging program sequence. If an advertisement is to be effectively processed, it must tap remaining cognitive resources. Thus the issue of the change in overall viewer elaboration level as the advertisement displaces the program becomes critical as an indicator of the availability of cognitive reserves.

Experiment 1

Sample and Method

Two programs were selected for the testing of the first hypothesis: an episode of *Alfred Hitchcock Presents* entitled *Road Hog*, and a *PM Magazine* episode. Forty-nine undergraduate students participated in this first research stage. Seated in specially constructed cubicles, they were visually isolated from one another, but had a direct view of the video monitor. Within each cubicle was a hand-held push-button device. The researcher instructed subjects to press the button after each tone was heard. The sound of the tone on the videotape activated a computerized timer, which then recorded each subject's response time in milliseconds.

Results

Within both programs, significant differences in mean response times occurred in relatively predictable positions, ranging from lows of .411 and .431 to highs of .959 and 1.035 seconds in *Alfred Hitchcock* and *PM Magazine*, respectively ($p < .01$). This result supports the first hypothesis; i.e., viewer elaboration demonstrated within-program differences in both programs.

The *Alfred Hitchcock* episode was selected for the testing of the remaining hypotheses. (A single program is used to avoid the potentially confounding influence of differences between programs, irrelevant to viewer elaboration, which plagued much of the earlier work in this area.) A comparison of the three program positions from which the original commercials were deleted yielded significant differences in response times between all pairs of locations (mean differences: .304 seconds, $p < .01$; .156, $p < .01$; .143, $p < .05$). This verifies the contention that viewer elaboration of program content varies between actual commercial positions (hypothesis 2) and highlights the need to understand how this phenomenon may affect the processing of advertising messages.

Experiment 2

Stimuli

To facilitate the final hypothesis tests, commercials were placed in low- and high-elaboration positions of the *Alfred Hitchcock* episode. The low-elaboration position selected appears seven minutes into the program. Hitchcock's prologue has ended, and some casual conversation has taken place at an industrial site, where the workers are about to break for lunch. No thought-provoking or exciting action has occurred. The high-elaboration position occurs six minutes before the end of the program, when the viewer witnesses a series of events which appears to be leading to the imminent

poisoning of the protagonist. The mean response time for the low-elaboration position in the earlier experiment was .475 seconds, compared to .816 seconds in the high-elaboration location, a highly significant difference ($t = 3.82$, $p < .01$).

The commercials employed in the main experiment were: (1) a message urging viewers not to allow their friends who drink to drive under the influence of alcohol; and (2) an advertisement for Mobil 1, a premium synthetic motor oil. They are professionally produced commercials and both are relevant to the student population, but neither had been aired recently in the viewing area from which subjects were drawn. They also differ from one another in terms of their underlying marketing objectives; one advocates a socially responsible behavior and the other a more conventional product purchase. The use of two commercials permits replication.

Sample and Method

A sample of 41 students participated in this stage of the research, with 17 viewing the drinking and driving commercial in the low-elaboration position and the Mobil 1 ad in the high-elaboration setting, and 24 exposed to the ads in reverse order. Two minutes after the end of the second test commercial, the video monitor was switched off and the researcher distributed the measurement instrument. (To avoid confounding effects due to different time intervals between exposure to the two commercials and responding to the self-report measures, subjects were provided with questionnaires specific to the ad most recently seen. Therefore, cognitive response, recall and attitudinal data reported hereafter relate exclusively to the commercial placed in the high-elaboration position. Furthermore, analyses of those constructs are reported separately for each advertisement to avoid confounding program elaboration effects with differences in executional style or other commercial-specific elements.)

For the cognitive response task, subjects were allowed three minutes to record their thoughts about Mobil 1 motor oil or confronting their friends about drinking and driving. Thereafter, they evaluated each thought as positive (favorable toward the topic of the ad), neutral (neither favorable nor unfavorable) or negative (unfavorable). In addition, independent judges later coded each thought as cognitive (interjudge reliability in total number of responses coded as cognitive, $r = .91$) or affective ($r = .83$) in nature, and as representing message (closely related to commercial information, $r = .90$) or own (more personal thoughts about the topic of the ad, $r = .82$) thoughts. Instructions for the message recall task invited subjects to record everything they could remember about the ad, including the words, pictures or scenes, and music. Judges later coded responses in terms of total number of commercial elements recalled ($r = .91$), and as central (directly relevant to the message's persuasive intent, $r = .90$) or peripheral (tangential background or executional factors, such as colors, clothing, music style, $r = .88$).

Results

Consistent with the earlier experiment, the tones heard immediately prior to the two commercial break positions elicited significantly different response times, with subjects taking longer to push the button in the high-elaboration than in the low-elaboration position ($t=3.47$, $p < .01$). This established the validity of the

program elaboration manipulation for the experimental sample.

A comparison of viewer response times before and during the commercial provides an indicator of whether processing intensity remains stable (no difference in response times), as one would expect if the demands of program elaboration consume most available cognitive resources, or increases (longer response times during than before the commercial) as a result of the use of remaining capacity to process advertising content in addition to the program. Pooled results from the viewers of both ads reveal that the mean time of response to the tone following the introduction of the commercial in the high elaboration position (.842) was not significantly different from that associated with the prior tone (.918). In contrast, a significant difference emerged between pre-commercial response time in the low program-elaboration position (.494) and that associated with the first tone heard during the commercial (.594) in that location ($t = 2.6, p < .05$; separate analyses for the two commercials yielded comparable results). Thus extensive elaboration of program content is shown to leave minimal cognitive resources available for an increase in overall processing levels when a commercial appears, whereas such an increase is possible when program elaboration is low, as suggested by hypothesis 3.

Multiple regression was applied to the experimental data to assess the relationship of program elaboration, as measured by secondary task response time, and cognitive response, recall and attitude. As noted earlier, the regression analysis is applied only to data obtained from the commercial in the high-elaboration condition. Table 1 contains standardized parameter estimates associated with the regression

equations and the proportion of variance which each explains (R^2).

For the drinking and driving ad, response times generally demonstrated a strong relationship with cognitive response generation ($R^2 = .65$), with increasing pre-commercial response time resulting in a corresponding increase in total number of thoughts, and more specifically in own thoughts. While the total variance accounted for is lower in the Mobil 1 ad, pre-commercial response times had a marginally significant positive association with total thought generation, and were significantly associated with positive, cognitively oriented, and own thoughts. This positive relationship of pre-commercial response times with various cognitive response measures implies that increasing amounts of program elaboration induced a corresponding increase in attention to the commercial, which in turn resulted in the generation of more commercial-relevant thoughts.

While subjects may have been motivated to think about the topic of the ad, a negative relationship emerged between pre-commercial response time and recall measures for the Mobil 1 commercial, with response times accounting for 62 percent of the variance in the total number of message elements recalled. (For the drinking and driving ad, variance accounted for was low and parameters were not significant.) This suggests that, in the case of the Mobil 1 ad, increasing program elaboration reduced the efficiency of viewers' processing effort, thereby inhibiting their ability to store and subsequently retrieve message details. This result supports hypothesis 4, and is consistent with the finding cited earlier that response times did not change significantly as the high-elaboration program segment gave place to a commercial.

Table 1
Response Time Regression Results

	Mobil 1				Drinking and Driving			
	Before	During	After	R ²	Before	During	After	R ²
<i>Cognitive Response Measures</i>								
Total	.56 ^d	.37	-.37	.28	.97 ^a	-.96 ^c	.99 ^b	.65
Positive	.67 ^c	.53 ^c	-.48 ^d	.46	.41	-1.39 ^c	1.10 ^c	.38
Neutral	-.02	-.21	.28	.08	.61 ^d	.05	-.08	.39
Negative	-.34	-.23	.09	.12	-.18	1.15 ^b	-.28	.70
Cognitive	.71 ^c	.40	-.33	.42	.65 ^d	-.47	.49	.30
Affective	-.23	.05	-.28	.17	.60 ^d	-.95 ^d	.96 ^d	.30
Message	.41	.46 ^d	-.78 ^b	.46	.54 ^d	-.13	.29	.31
Own	.58 ^c	.23	-.22	.27	.83 ^b	-.74	.70	.44
<i>Recall Measures</i>								
Total	-.79 ^c	1.45 ^b	-1.02 ^c	.62	.23	.32	.15	.32
Central	-.92 ^c	1.30 ^c	-.52	.51	.38	.40	-.12	.32
Peripheral	-.50 ^c	-.24	-.26	.48	-.18	-.05	.61	.33
Attitude	-.32	1.03	-.73	.21	-.81 ^b	.38	-.04	.55

^a $p < .001$

^c $p < .05$

^b $p < .01$

^d $p < .10$

Note: Within-commercial response times are reported here for the sake of completeness. Their interpretation, however, is difficult, since such data convey no information about whether the elaboration which accounts for them is directed at the program or the commercial. Furthermore, differences between commercials are difficult to interpret because of differences in advertising objectives and executional styles. Such concerns are not viewed as damaging, however, since alternative measures of commercial processing serve as dependent variables, and the response times which are vital to the testing of the hypotheses (i.e., pre-commercial) do not suffer from such ambiguity and interpretational difficulty.

While attitudinal results were not specifically hypothesized it is noteworthy that response times explained 55 percent of the variance in viewer attitude toward confronting friends about drinking and driving. The only significant response time parameter is associated with the tones heard prior to the commercial break. The inverse relationship between those response times and viewers' attitudes suggests that increasing amounts of pre-commercial program elaboration resulted in a less positive attitude toward the behavior advocated by the ad. However, this occurred in spite of the direct relationship between response times and cognitive response activity cited earlier. In other words, high levels of program elaboration induced extensive thinking about the ad, but had a detrimental effect on attitude. The explanation for this result appears to lie in the type of thoughts generated. Responses generated in a state of high program elaboration were largely "own" thoughts, which are likely to be less positive than message thoughts (Kisielius and Sternthal 1986).

Post-commercial response time results vary markedly across the two advertisements, implying the operation of some factors unique to the particular commercials employed. While the information gathered was inadequate to assess this discrepancy with confidence, two findings of interest emerge: (1) the total program environment, not just that which precedes the advertisement, seems to have an impact on viewer processing of the commercial; and (2) pre-commercial and post-commercial program elaboration are shown to be distinct phenomena, which may induce consonant or disparate effects on the processing of commercial messages.

Discussion

Results establish that points within a television program may be located that engage the audience in significantly different amounts of elaboration. They also confirm that ads, as they are currently placed in television programs, occur at points that differ significantly in terms of program elaboration. It is shown that certain program content has the capacity to induce viewers to commit a large proportion of available resources to its processing, thereby minimizing the efficiency with which they can encode and store information conveyed by a commercial. Therefore, viewers are better able to remember advertising message information when it is positioned in a program setting characterized by low levels of elaboration than when the ad interrupts a segment which induces high levels of thought.

In contrast with the viewer deficit in commercial recall associated with a high level of program elaboration, the expected consistency in the direction of commercial-relevant cognitive response activity did not emerge. Viewers generated more commercial-relevant thoughts when program elaboration was high than when it was low. It is plausible that the high-elaboration segment induced a high level of motivation to think about the topic of the advertisement at the same time that it reduced viewers' ability to efficiently process the actual message content.

Tangentially, the research also revealed that both pre- and post-commercial program elaboration affect viewer responses to advertising, and not necessarily in an identical manner. These findings fill a void in the program context literature by identifying the cognitive

mechanisms responsible for processing deficits associated with high levels of program elaboration.

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Motivation, Ability, and Opportunity to Process Information: Conceptual and Experimental Manipulation Issues

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Abstract

The first objective of this paper is to present arguments in favor of establishing the conceptual distinctiveness of motivation, ability, and opportunity antecedents to message elaboration. The paper demonstrates that a lack of conceptual clarity among these antecedent conditions can lead to manipulation confounding and questionable construct validity.

Second, the paper addresses operational problems inherent in the manipulation and measurement of these conditions. Suggestions for the use of confounding checks and other techniques in this regard are offered in order to avoid experimental disaster. The study serves as a caution to researchers experimentally manipulating these antecedent conditions to message elaboration.

Introduction

Over the years, much insight has been acquired concerning the theoretical antecedents of message elaboration and message-evoked thinking (cf., Batra and Ray 1986; Chaiken 1980; Petty and Cacioppo 1979; 1981; 1986; Petty, Cacioppo, and Schumann 1983; Petty, Wells, and Brock 1976; Roberts and Maccoby 1973; Wright 1973; 1974; 1980). Various antecedents of message-evoked thinking and eventual persuasion have been proposed, such as one's accessibility of thoughts, response opportunity, message processing goals (e.g., motivation to process), and personality traits (Wright 1980). For example, it has been argued that one thought is more accessible than another thought if it can be produced in active memory faster and more often than the other thought. Response opportunity acknowledges the message recipient's limited processing ability and coping strategies, especially under conditions such as high levels of distraction. Message processing goals, such as motivation, are said to expand message-related thinking. Finally, personality traits, such as cognitive skills, knowledge, and expertise, have also been associated with increased message-evoked thinking (Wright 1980).

Perhaps the most frequently studied antecedent has been motivation to process information. The most common driving force behind one's motivation to process has been labeled "involvement" and has been the subject of extensive categorization efforts. For instance, Gardner, Mitchell, and Russo (1978; 1985) have suggested that three involvement categories serve as antecedents to persuasion: high involvement, strategy-limited low involvement, and attention-limited low involvement.¹

High involvement refers to the state of arousal to process brand-relevant advertising information.

¹ Other categorizations of involvement have been couched in hierarchy-of-effects terminology, including Park and Young's (1986) cognitive, affective, and low involvement categories as well as Greenwald and Leavitt's (1984) four levels of audience involvement: preattention, focal attention, comprehension, and elaboration.

Strategy-limited low involvement contends that consumers are attentive to non-brand advertising content (music, scenery, sources etc.), while attention-limited low involvement implies an absence of attention to either brand or non-brand ad content. Arguably, however, the involvement level might best be conceptualized as being on a continuum (vs. categorization) from low to high. In fact, similar arguments have been made for a continuum of message elaboration (cf., Petty and Cacioppo 1986, p. 7-10). Yet, operationally, the notion of an involvement continuum would present problems in an experimental manipulation (see the "operational ranges" section).

Recently, researchers have explored relationships among combinations of possible antecedent conditions to message elaboration. For example, there has been considerable interest in the elaboration likelihood model (ELM) in that it can be said to have intelligently incorporated a variety of persuasion variables into a succinct and empirically testable framework (Petty and Cacioppo 1981; 1986). Specifically, the ELM suggests that the likelihood of message elaboration occurs as a function of separable elements of one's *motivation* and *ability* to process information. When a message receiver is both motivated to process message content (e.g., due to the personal relevance of the message) and has the ability to process the content, the *central route* to persuasion is hypothesized to occur. These conditions of motivation and ability are said to foster message-relevant thinking, activate cognitive responses, create changes in cognitive structure, and eventually lead to an enduring impact on one's attitudes toward the communicated topic.

When these antecedent conditions are not present, attitude formation/change can occur via the *peripheral route* to persuasion. Here, the message recipient focuses not on primary message content, but upon background cues (e.g., music, scenery, source characteristics) that are peripheral to the main message content. Attitudinal effects under the peripheral route are hypothesized to be less enduring than those under the central route.

The notion of motivation and ability as antecedent conditions to information processing is not a novel one. In fact, Petty and Cacioppo (1986, p. 8) acknowledge the contribution of Heider's (1958) concepts of "trying" (motivation) and "can" (ability) in the development of the ELM. These two antecedent conditions have also taken the forms of "arousal" (motivation) and "capacity" (ability) in other research efforts (Wright 1973).²

Recently, this research has been extended in order to delineate *three* antecedent conditions to cognitive response generation: the message recipient's *motivation*, *ability*, and *opportunity* to process information (Batra and Ray 1986). It should be noted that the ability and opportunity variables have been

² For a complete discussion and schematic depiction of these antecedent conditions to message elaboration and processing, the reader is directed to work by Petty and Cacioppo (1986, p. 218-221) and Mitchell (1981, p. 25-29).

combined by Petty and Cacioppo under the "ability" condition. However, others (Batra and Ray 1986; Wright 1980) use "opportunity" as a separate antecedent to mean the absence of respondent control over "exposure time, message length, the number of arguments in a message, and distractor thoughts evoked by competing messages" (Batra and Ray 1986, p. 434). In turn, Batra and Ray's "ability" condition includes those response-enabling variables *under the respondent's own control* (e.g., product knowledge, self-schema, expertise).

The purpose of this paper is to establish the importance of the motivation, ability, and opportunity conditions as separate concepts and, then, to address several operational problems that arise in the measurement of the conditions. Suggestions to maintain the conceptual clarity of the conditions in one's experimental manipulations are then provided.

Motivation, Ability, and Opportunity as Separate Concepts

It is important to establish the conceptual independence of variables in experimentation in order to avoid confounding of the manipulations.³ If confounding of manipulations occurs, the researcher's confidence in causal explanations of the experimental results is greatly reduced (Perdue and Summers 1986). The reasoning is that the construct validity of the operationalization of manipulations is now suspect under confounding.

Establishing the theoretical meaningfulness of concepts is the first and perhaps the most important step toward construct validation. At the heart of this process is the notion of *construct explication* or the procedure of making an abstract word explicit in terms of its observable variables (Nunnally 1978). As noted by Cook and Campbell (1979, p. 62), "A precise explication of constructs is vital for high construct validity since it permits tailoring the manipulations and measures to whichever definitions emerge from the explication." These emerging definitions should be clear and in accordance with general understanding of the words being used. For example, although several definitions of involvement exist (Zaichowsky 1986), the underlying theme of involvement can be said to be the personal relevance (Apsler and Sears 1968) of the goal-object (e.g., advertising, product, purchase decision) to the individual. Most would also agree that involvement can be defined as an individual, internal state of arousal with intensity and direction properties (Mitchell 1981; Zaichowsky 1986). This internal state can be distinguished from its possible antecedents (e.g., risk), consequences (e.g., information search, elicitation of cognitive responses), and related, but different, constructs (e.g., familiarity). Therefore, researchers should avoid conceptualizing and/or measuring involvement as: (1) antecedents to involvement, such as

product importance, risk, symbolic or hedonic values (cf., Kapferer and Laurent 1986; Laurent and Kapferer 1985); (2) brand awareness, product knowledge or emotions (cf., Tyebjee 1979); (3) cognitions or affect (cf., Park and Young 1986); (4) familiarity, commitment, or importance (cf., Lastovicka and Gardner 1979; Rothschild 1979); or (5) information search (cf., Gensch and Javalgi 1987). Many of the researchers would reason that by the virtue of *measuring* involvement antecedents or consequences the state of involvement can be inferred. Preferably, antecedents theoretically predicted to influence involvement should be manipulated, while indicators tapping the true involvement *state* (vs. antecedents or consequences of the state) should be used as a measure (i.e., manipulation check) of involvement.

Necessary Evidence

The relationship between involvement and cognitive response production and logic from Tesser and Krauss (1976) will now be used to present the evidence necessary to infer that two constructs (e.g., involvement and cognitive responses) are theoretically different.

An observed relationship between an indicator of involvement and that of cognitive response production may mean one of four things: (1) both indicators measure involvement, (2) both indicators measure cognitive response production, (3) a third variable (e.g., opportunity to respond) has altered the relationship between involvement and cognitive responses, or (4) the indicators do indeed reflect different, but related, constructs. Tesser and Krauss (1976) indicate that demonstration of a shifting, nonmonotonic and/or asymmetric relationship provides evidence to reject the hypothesis that both indicators reflect the same construct.⁴ Confounding checks (to be discussed) also provide evidence helpful in rejecting hypotheses (1), (2), or (3).

Further Reasoning

Regarding the antecedents to message elaboration, as Petty and Cacioppo explain, "...the likelihood that elaboration occurs can be viewed as being a function of *separable* elements of motivation and ability" (Petty and Cacioppo 1986, p. 218). The separability of these concepts is based upon the following reasoning: "If a person is highly able to process a message but lacks the prerequisite motivation, little processing will occur" (Petty and Cacioppo 1986, p. 81). Conversely, if a message processor is motivated to process message content (due to personal relevance of an advertised product) but lacks the required ability (due to limited knowledge) and/or opportunity (due to distracting stimuli), little message elaboration will occur. Therefore, each individual antecedent condition serves only as a necessary, but not sufficient condition for message elaboration. Table 1 provides a list of additional factors (to the above example) influencing one's motivation, ability, and opportunity to respond. It should be noted that these factors serve as antecedents (as opposed to indicators) of their respective constructs.

³ Confounding occurs when a manipulation meant to represent one theoretical construct can be interpreted as representing more than one construct (e.g., a manipulation of involvement affecting treatment groups' levels of involvement and product familiarity). In essence, if confounding occurs, one is not manipulating the theoretical construct that was intended to be manipulated. Therefore, any differences found in the dependent variable can no longer be solely attributed to differences in the manipulated theoretical construct.

⁴ A shifting, nonmonotonic relationship indicates that as the magnitude of one indicant increases, there is at least one change in the direction of the other indicant. A relationship is said to be asymmetrical when the relationship of A to B is not identical to that of B to A (Tesser and Krauss 1976).

Table 1
Factors Influencing Motivation, Ability, and Opportunity to Process Information^a

Motivation	Ability	Opportunity
personal relevance	knowledge	distraction
personal responsibility	self-schema	exposure time
number of sources	familiarity	message length
need for cognition	expertise	message comprehensibility
forewarning of message content		number of message arguments
forewarning of persuasive intent		message medium clutter

^aAdapted from Batra and Ray (1986) and Petty and Cacioppo (1986, p. 220).

The examination of media differences and involvement has led other researchers to make similar conclusions about the separability of the concepts. For example, as Wright (1974, p. 194) argues,

Involvement in actively processing information is largely a function of a person's recognition that the information has goal-satisfaction value to him. Involvement is thus grounded in the perceived meaning of the specific content. An advertisement that is highly arousing to a receiver by virtue of its content may be transmitted in a form that restricts his opportunity for response, or vice-versa. *Arousal* to process and *opportunity* to process should, therefore, be treated as theoretically separate variables.

Support for this contention was found by Wright (1974) in the examination of the interaction between content involvement and media conditions. When exposed to the broadcast message, individuals engaged in equal counterargumentation regardless of involvement. When exposed to the print message, high content involvement subjects engaged in significantly more counterargumentation than low content involvement subjects.

Others have argued for conceptual distinctiveness between ability (due to expertise) and motivation (due to involvement). Zaichkowsky (1985a, p. 296) indicates that:

Expertise may not be necessarily related to involvement because involvement is a motivational construct whereas expertise is a sustaining construct representing knowledge structure. One does not necessarily have to be an expert in order to be involved with the product. However, involvement may motivate one to gather information and in time become increasingly knowledgeable about the product.

Zaichkowsky (1985a) found support for her first contention in that there was not a significant relationship between involvement and expertise scores for 35mm cameras and red wine products tested. The second contention, that involvement may lead to increased knowledge over time, serves as a topic for the next section.

Operational Problems

Even though it can be argued that motivation, ability, and opportunity are conceptually distinct and

should be treated as such in experimental settings, several *operational* problems can still occur.

Antecedents to One Another

As indicated by several writers (Batra and Ray 1986; Lutz, MacKenzie, and Belch 1983; Petty, Cacioppo, and Goldman 1981; Zaichkowsky 1985a), measures of motivation (due to perceived importance) and ability (due to acquired knowledge) have been found, in some practical situations, to be significantly correlated with one another. This can create problems for the conceptual and, especially, the operational distinctiveness of the measures. However, there are three possible explanations for the significant correlations. First, motivation to process can, *over time*, develop into an antecedent condition influencing one's ability to process. For example, those motivated to find out more about an advertised topic might be more likely, *over time*, to develop greater expertise or invoke self-schema than those who are less motivated. In fact, studies by Batra and Ray (1986) and Lutz, MacKenzie, and Belch (1983) simply measured existing product importance and knowledge as opposed to manipulating these variables *at the time of the experiment*. Therefore, it is quite possible that extended periods of motivation (due to perceived product importance) might lead to greater product knowledge. Second, the self-report measures of product expertise/knowledge have been criticized (cf., Zaichkowsky 1985a) as being inflated measures of "true" expertise/knowledge. Studies involving "true" measures of expertise have found no relationship between expertise and involvement levels (Zaichkowsky 1985a). Third, the operationalization of motivation as "measured product importance" is certainly quite different from its operationalization as "experimentally manipulated involvement in a product's advertisement." It would be interesting to see the relationship between motivation and ability *across* a variety of operationalizations of motivation.

Using causal modeling methodologies, Zinkhan and Muderrisoglu (1985) have investigated the preceding problem by providing evidence for the discriminant validity among product involvement, familiarity, cognitive differentiation, and advertising recall constructs. All four constructs shared more variance in common with their indicators than with the other constructs in the model.

Another perplexing problem is that motivation, ability, and opportunity may all interact in some situations. For example, Wright (1981, p. 281) suggests that:

Audience members' acute interest in the ad may increase thought production only when the reception situation is relatively strain free (e.g., print mode), but when the reception situation is more strainful (e.g., audio mode), motivational differences may be less important than inherent cognitive ability in determining thought levels.

The possibility of the three-way interaction among motivation, ability, and opportunity should serve as a caution in the development of operationalizations. For example, consider a hypothetical situation in which a researcher predicts increased cognitive response activity to print advertising under a high level of motivation (e.g., due to greater personal relevance) and a high level of ability (e.g., due to subjects having extensive product knowledge). The results, however, are opposite of predictions. It seems an extremely complex, high personal relevance treatment was perceived by subjects as severely limiting their opportunity to process the advertising information. Therefore, this caused subjects exposed to the high personal relevance treatment to generate significantly fewer (as opposed to greater) cognitive responses.

With the manipulation of any one of the conditions, every effort should be made to hold the other conditions constant. In fact, one should include confounding checks (to be discussed) to determine if the manipulated condition inadvertently affected the non-manipulated conditions. In addition, longitudinal studies might be insightful in untangling causal interpretations concerning the time occurrence of the variables. Perhaps of equal practical significance is the reality that the manipulation of one variable (e.g., motivation) may ultimately depend upon the level selected in holding the other variables (e.g., opportunity) constant.

Operational Ranges

Cook and Campbell (1979) caution researchers to be careful in experiments that involve the manipulation of several discrete levels of an independent variable that is continuous. For example, one might conclude that "manipulated high involvement" does not impact cognitive response production when in fact the "manipulated high involvement" was at an involvement level too low to produce cognitive responses. Therefore, it is important to conduct research at many levels of the continuous variable.

Another problem arises when a related, nonmanipulated variable (e.g., opportunity to respond) in an experiment occurs at a level either too low or too high to allow the intended manipulation (e.g., involvement) to operate. For instance, if an experiment contained an unlimited time to process a single advertisement, it is doubtful that a significant separation between manipulated high and low involvement groups would be attained. Similarly, if an experiment contained an overwhelming number of advertisements under an unreasonably short exposure time, significant separations between manipulated involvement groups would again be difficult to achieve. As argued with inverted-U effects in cognitive response production (Batra and Ray 1986; Cacioppo and Petty 1979), the manipulation of message processing involvement (with subsequent message elaboration) will tend to operate only in a given range of one's opportunity to process the message. The solution to this dilemma is to conduct

several pretests varying the level at which other important, non-manipulated conditions are held constant.

Avoiding Experimental Disaster

This section suggests the use of several techniques to help avoid experimental disaster for researchers examining motivation, ability, and opportunity constructs. While the techniques presented are certainly not novel, their application to the antecedents of message elaboration would help contribute to the construct validity of the variables.

Construct Validity and Confounding Checks

It is certain that the advancement of the motivation, ability, and opportunity concepts will be enhanced when the construct validity of their measures is established (Cook and Campbell 1979). Some work in this regard has taken place in establishing the convergent and criterion validity of the involvement concept (Zaichkowsky 1985b). However, given the close (but conceptually distinct) relationships among motivation, ability, and opportunity, establishing the *discriminant* validity of the measures is the important issue. That is, we must be careful that manipulations do not produce changes in measures of related but conceptually different constructs. For example, it would be desirable for a researcher to investigate whether a manipulation designed to alter motivation to process inadvertently varied perceptions of one's opportunity to process or mood states rather than, or in addition to, motivation to process (Perdue and Summers 1986).⁵ The solution to this problem is provided by Perdue and Summers (1986) who strongly suggest the use of "confounding checks" to assess discriminant validity issues (such as above) in addition to manipulation checks normally used to measure convergent validity.⁶

Confounding checks, in the pretest development of motivation, ability, or opportunity manipulations, would prove to be invaluable to researchers placing any importance on hypothesized, causal relationships among manipulations and dependent measures. With multi-factor designs, the full-factorial ANOVA model for manipulation checks may provide researchers with added insight if it is likely that one manipulation (e.g., source credibility) may have unintentionally affected the measure of a different manipulation (e.g., an involvement manipulation check). If a confound occurs, it is important to determine the *degree* of confounding present. This can be accomplished by analyzing the effect size (e.g., with omega-squared) of the confounded relationship. This effect size should not be larger than that of the intended relationship. One additional issue is whether or not the confounding variable is theoretically important in

⁵ Park and Young (1986, p. 21) acknowledge that their low involvement manipulation ("think of your friend's illness") may have distracted the subject's focus of attention by creating a sad *mood* which in turn lowered the subject's brand evaluation.

⁶ A confounding check is a type of manipulation check that tests for a divergence of measures and manipulations of related but distinct "things" (Perdue and Summers 1986). It should also be mentioned that, although they did not use "confounding checks", Batra and Ray (1986) explored the variation of the opportunity manipulation check within both their motivation/ability treatment groups.

relation to the primary dependent measures. For example, in an experiment manipulating involvement, a confound with ability or opportunity may severely limit interpretation of the results (for additional details see Perdue and Summers 1986).

While it is acknowledged that it is difficult to capture true low involvement conditions in the laboratory, we should be careful not to combine both involvement and opportunity under low involvement treatments. For example, efforts made to induce low involvement processing by directing attention away from the target ad's content include: gift choices for other products advertised; having subjects search for alliteration, rhymes, hyperholes, etc. in the ad; and asking subjects to view a commercial thinking about a friend's illness. Under these processing strategies, it is quite possible that both one's involvement and opportunity to respond are affected. Therefore, unless appropriate confounding checks are included, any causal implications for involvement may be confounded with opportunity as well. Future research should make use of confounding checks to avoid operational problems associated with the manipulation of motivation, ability, and opportunity conditions.

An Illustration

The following example illustrates one possible use of manipulation and confounding checks in the context of experimentation with motivation, ability, and opportunity constructs.

Consider the following hypothetical experiment of print advertising. A researcher employs a 2 x 2 factorial design by manipulating involvement in the advertising message (high vs. low) and message argument strength (strong vs. weak). Significantly greater attitude change is predicted for high involvement subjects exposed to strong (as opposed to weak) message arguments. The researcher follows conventionally accepted involvement (varying the personal relevance of the advertised message) and argument strength (varying the cogency of an equal number of message arguments) manipulations (cf., Petty, Cacioppo, and Schumann 1983). The state of involvement in the advertising message is checked via multiple items assessing the degree to which subjects focused on, concentrated on, and were engrossed in, engaged in, and involved in processing the message claims. Argument strength is checked by the degree to which subjects found the message arguments to be strong, persuasive, convincing, good arguments, etc. The reliability of both measures is then analyzed, followed by a full-factorial ANOVA model of both factors for each of the two manipulation checks. The involvement manipulation should have significantly affected the involvement manipulation check with no evidence of interaction or argument strength effects. Similar reasoning can be applied to the argument strength manipulation check. Confounding checks are also necessary to ensure that related concepts of opportunity, ability, or mood have not been inadvertently affected by the manipulations. Finally, for comparability and understanding of results, the researcher should be cognizant of the relative level at which the involvement and argument strength variables have each been manipulated. This also holds true for the relative levels of related constructs (e.g., opportunity, ability) held constant in the experiment.

Internal Analysis

If an experimenter's manipulation is unsuccessful, and confounding checks do not uncover any inadvertent confounding of the manipulation, an internal analysis (Carlsmith, Ellsworth, and Aronson 1976) may be used to determine whether or not the hypotheses still hold true. For example, if an involvement manipulation was unsuccessful, the experimenter can re-analyze the data by a median split on the manipulation check separating those who are truly involved (regardless of the manipulation) from those who aren't. The re-analysis of the data using these two groups and primary dependent measures will indicate whether or not the hypotheses still are relevant. However, the researcher can not make any causal claims from the analysis.

If the re-analysis of the data proves unsuccessful, the researcher may desire to perform an internal analysis on the *confounding checks* to determine if the related constructs have influenced the primary dependent measures. The internal analysis can be a useful tool in suggesting new hypotheses and interpretations of the data, and could be especially helpful in the analysis of antecedent conditions of message elaboration.

Summary

For interpretative and causal reasons, it is important to establish the conceptual distinctiveness of the motivation, ability, and opportunity antecedents to message elaboration. For example, one may have the desire to be involved in an advertised message, possess sufficient knowledge to process its claims, but distraction may severely limit the message processor's opportunity and ultimately reduce message elaboration. In addition, to infer that an involvement manipulation was the sole influence on cognitive response production assumes that the involvement concept has been found to be independent from related, but theoretically distinct, concepts such as ability and opportunity.

Although the variables are recognized as being conceptually distinct, the success of the manipulation of one antecedent condition (e.g., motivation) can ultimately depend on the level at which other conditions (e.g., opportunity) are held constant. Therefore, it is important for researchers to understand the relative level at which a variable is manipulated as well as levels used to hold constant other theoretically related variables.

Because of the practical considerations found in developing successful manipulations of motivation, ability, and opportunity conditions, it is important to go beyond traditional manipulation check measures and include confounding checks as well. This procedure is important to ensure that a manipulation of one condition (e.g., motivation) will not inadvertently affect the perceptions of other non-manipulated conditions (e.g., opportunity). Internal analyses of manipulation and confounding checks can provide researchers with helpful suggestions in the redesign of motivation, ability, and opportunity experiments.

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On Assessing the Emotionality of Advertising Via Izard's Differential Emotions Scale

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Abstract

Recently, several researchers have called for additional work on measurement methods that might capture the multidimensional richness of ad-evoked emotion. This paper involves an empirical investigation of two instruments that derive from Izard's (1977) differential emotions theory. Izard's influential theory postulates ten discrete emotion types. Data are reported from two studies which suggest his measures can be adapted to a variety of contexts while maintaining their desirable psychometric properties. The data also provide some insights about the nature of emotions commonly associated with advertising.

Introduction

A variety of forces have converged in recent years to yield surging interest in affective and/or emotional topics among consumer and especially advertising researchers (e.g., Aaker, Stayman and Hagerty 1986; Batra and Ray 1986; Havlena and Holbrook 1986; Holbrook and Westwood 1987). A major focal point of this interest has involved the attitude-toward-the-ad (Aad) construct (e.g., Lutz 1985; MacKenzie, Lutz and Belch 1986). Aad researchers have produced empirical support for the inference that Aad is an important mediator of advertising's impact on *brand* attitude. However, as this stream has matured, some concern has arisen regarding the inherently inhibiting nature of Aad. That is, this construct leads researchers to consider ad-evoked affect as a unidimensional, bipolar variable which involves only simple evaluations concerning how good or likeable an ad is; thus the concern that Aad researchers "have thereby missed the multidimensional richness of the emotional responses that presumably mediate advertising effectiveness" (Holbrook and O'Shaughnessy 1984, p. 48).

Recently, Holbrook and O'Shaughnessy's concern about Aad's constraining nature has been recognized and reaffirmed by others (cf. Aaker et al. 1986; Batra and Ray 1986; Zeitlin and Westwood 1986). With this recognition has come a call for more research about the diversity of emotions that may be generated by exposure to advertising. If emotional response to advertising is a rich, multifarious phenomenon, can it be captured in data? What types of emotional responses are frequently provoked during ad exposure, and can measurement systems be adapted or developed to reliably gauge them? The present project presents data germane to these questions.

Psychologists have studied emotional structure for decades: their work furnishes a tempting starting point for those who are interested in exploring the richness of ad-evoked emotion. Indeed, psychologists have developed a number of comprehensive emotional taxonomies (e.g., Smith and Ellsworth 1985) and correspondent measurement systems which may be adaptable to the advertising domain (cf. Batra and Ray 1986). While Plutchik's (1980) emotional typology has been a focus of empirical work (Havlena and Holbrook 1986; Holbrook and Westwood 1987; Zeitlin and

Westwood 1986), it is apparent that "much work remains to be done in constructing, comparing and validating competing typologies of emotional content" (Holbrook and O'Shaughnessy 1984, p. 59). The focus of this project is one of Plutchik's major theoretical competitors -- Izard's (1977) differential emotions theory.

The taxonomies advanced by theorists like Izard and Plutchik were obviously *not* conceived as systems for categorizing reactions to ads; it is by no means obvious that they will prove useful in helping us measure or understand advertising response. Indeed, we assume that examining these typologies for their potential applicability in an advertising context is an ambitious borrowing endeavor. This assumption guided our approach to the data collection reported herein, and led us to try to challenge the applicability of the Izard framework for the advertising domain. The issue of whether advertisements do provoke Izard's (1977) ten fundamental emotions is treated as an empirical question.

Two studies were conducted using Izard's differential emotions scale. Before turning to these data a brief discussion of Izard's system is provided, and concerns are elaborated about the adaptability of such a system for the advertising context.

The Izard Framework

Several typologies (e.g., Izard 1977; Plutchik 1980) have been proposed which seek to delineate finite sets of primary emotions. These theorists contend that all emotional experience can then be defined in terms of various mixtures or blends of the primary emotions. Izard's (1977) theory postulates ten primary emotions: interest, joy, surprise, sadness, anger, disgust, contempt, fear, shame and guilt. Izard (1977, p. 64) defines emotion as an intraindividual process characterized by specific neurophysiological activity and distinctive facial expression. He also proposes that each emotion type is associated with a unique, consciously-experienced, feeling state. It is this experiential component of emotion that is examined herein.

There are a number of reasons why Izard's system merits the attention of consumer researchers. First, Izard's typology is motivating new research in the emotions literature (e.g., McHugo, Smith and Lanzetta 1982; Mosher and White 1981), and his measurement procedures have been refined through considerable validation work (e.g., Fuenzalida et al. 1981; Izard 1977; Kotsch, Gerbing and Schwartz 1982). Also, Izard's taxonomy includes two added emotions (shame and guilt) not appearing in the Plutchik system advocated by Holbrook and his colleagues. Explicit consideration of these additional emotion types could prove germane for communication research involving guilt arousal (e.g., Bozinoff and Ghingold 1983). Finally, Izard's framework supplied the structure for Batra and Ray's (1986) recent review and synthesis of the emotion-typologies literature.

To assess emotion Izard and others have developed the Differential Emotions Scale (DES) (see Izard 1977, p. 126). The DES "is a standardized instrument that reliably divides the individual's description of emotion experience

into validated, discrete categories of emotion" (Izard 1977, p. 124). The DES was formulated to gauge the emotional state of individuals at that specific point in time when they are responding to the instrument. A minor variant (the DES II) also allows assessment of emotions experienced over extended time periods. DES II allows the researcher "to determine how often one experiences each of the fundamental emotions" (Izard 1977, p. 125) in a specific context or over a specified time period.

The DES and DES II are both formulated around a thirty-item adjective checklist, with three adjectives for each of the primary emotions. Another variant has also been developed which expands each of the adjectives into phrases that describe the subjective feelings associated with each primary emotion. This version is referred to as the DES III (Kotsch et al. 1982). Both the DES II and III are used herein.

Emotional Typologies in the Advertising Domain: Borrowing Concerns

It can not be assumed that the desirable psychometric properties of Izard's instruments will automatically extend to an advertising application (cf. Peter and Churchill 1986). However, borrowing concerns in this instance extend beyond a call for reaffirming psychometric properties in the new context. Consumer researchers also need to consider the more fundamental question of whether the focal phenomena that psychologists seek to understand really occur as part of day-to-day ad processing. That is, do advertisements really provoke the kinds of experiences that Izard, Plutchik and others think of as emotion?

Contemporary theorists like Izard and Plutchik portray emotion as an adaptive, motivating mechanism. As summarized by Smith and Ellsworth (1985):

...emotions represent adaptive responses to the demands of the environment. Interpretation of the perceived situation in terms of prevailing goals creates an emotional experience that allows the organism to respond adaptively. This view implies that cognitive appraisals will lead to an emotional response primarily when they are perceived as having adaptive significance for the organism's well-being (p. 836).

Given this view of emotion as a process which facilitates individual adaptation to a demanding environment, it seems reasonable to question whether advertisements actually provoke emotion. Indeed, the scientific meaning psychologists ascribe to the emotion construct may have little relevance to the phenomenology of ad processing.

Consumer researchers have a notable reputation as ambitious borrowers (cf. Olson 1982; Sheth 1982), and scholars like Sheth (1982) have contended that "there is a clear surplus of borrowed constructs and a critical shortage of self-generated constructs in consumer behavior" (p. 14). Such a charge certainly merits reflection in the context of ad-evoked emotion. It is conceivable that the theories of Izard and others take for granted a level of attention to and involvement with environmental stimuli that simply does not characterize most ad processing. Thus, while commercials clearly do have the capacity to alter one's subjective feelings, these "altered feelings" may be simpler, less differentiated, and less intense than the focal phenomena of differential emotions theory.

There are theoretical alternatives to the Izard-type taxonomy which do conceptualize feelings as simpler, less differentiated forms of response: these are noteworthy because they facilitate translating the borrowing dilemma noted above into an empirical competition. Recent social cognition research has established that low-intensity affective states can impact cognition and behavior (e.g., Allen and Madden 1985; Isen 1984). Furthermore, empirical evidence indicates that this simple feelings construct is best conceived as two unipolar and largely independent dimensions which correspond to pleasant and unpleasant affect (cf. Abelson et al. 1982; Isen 1984). Such low intensity affects are likely to be a common part of day-to-day ad processing (e.g., Lutz 1985; MacKenzie, Lutz and Belch 1986).

If this simplistic feelings construct more effectively represents the subjective experience of ad processing, then Izard's ten-dimensional system should prove unwieldy in gauging advertising response. Alternatively stated, if the simpler conceptualization is more correspondent with common, ad-evoked feelings, one might expect the structure of the Izard instrument to collapse into a more parsimonious, two-dimensional system.

Interestingly, recent empirical work indicates that Plutchik's eight primary emotions collapse into two dimensions of response when consumption experiences (Havlena and Holbrook 1986) or advertising reactions (Holbrook and Westwood 1987) are the research focus. Our project supplies data concerning whether the complex structures of Izard's DESII and DESIII maintain their integrity in the ad-response context. First, however, a pilot study which examined more basic concerns about the psychometric properties of Izard's DESII and DESIII is reported.

Study I

One of our fundamental concerns about the DESII involved its adjective checklist format and whether grouping items by emotion type would influence reliabilities of each scale and/or the structure of the overall instrument. When these adjective items are grouped (rather than mixed randomly) in a questionnaire, it can be obvious to subjects that they are responding to related sets of items. This could yield a substantial response bias if a subject tried to be consistent within sets of items, rather than responding independently to each item. Such bias could inflate coefficient alpha (cf. Peter and Churchill 1986), and if it were substantial enough, the observed dimensionality of the overall instrument could be affected. Study I was conducted to assess how sensitive the reliabilities and ten-dimensional structure of Izard's instruments are to this response bias.

Beyond mixing the adjectives, another way that one might evoke more careful responses would be to enrich the individual items so that each is more thought provoking. Indeed, Izard's DESIII is primarily an enriched version of DESII, since in the DESIII each adjective is expanded into a phrase which offers more depth in describing the target emotion (cf. Kotsch et al. 1982). Because DESIII may be viewed as an enrichment of the DESII, the expectation was that DESIII would prove less susceptible to response bias contamination.

To examine these concerns, two questionnaires were developed that contained the DESII, then a page of "filler" items, followed by the DESIII. In version one of this instrument, the DESII adjectives were grouped by emotion type, while DESIII's phrases were mixed

randomly; in version two, the adjectives were randomly mixed and the phrases were grouped. The context of the study involved the emotional character of college life. A total of 208 undergraduates from introductory business courses completed one of the two versions of the questionnaire.

Coefficient alpha's were calculated for each of the emotions in the four formulations of the DES: most fell in a range from .75 to .90. As expected, they demonstrated that the reliability of each scale is impacted by item grouping; however, this was the case for both the adjectives (DESII) and the phrases (DESIII). In a number of instances, mixing the items lowered the reliabilities from an acceptable range (.78 to .85) to more marginal levels (.63 to .68).

These data were also used to test the theoretical, ten-dimensional structure of the instruments. First, confirmatory factor analyses (via LISREL VI) were examined for the four DES variations. While no variant yielded an acceptable fit for the ten-dimensional model, the goodness of fit indices ranged from .75 to .77, indicating little discrepancy among the four versions in their actual dimensionality. Exploratory factor analyses were also run to offer further insight concerning actual dimensionality: results are summarized in Table 1. Factor loadings of .6 and above were used to interpret the derived factors. Seven to nine factors proved interpretable for each of the DES variants.

The most complex structure was the nine factor solution for the mixed adjectives. Notably, while the guilt/sadness scales collapsed to yield a single factor, this result was probably due to the fact that two of the guilt items (guilty and blameworthy) appeared before and after one of the sadness items (downhearted) in the checklist. Without this quirk in the item ordering, it is likely that the mixed adjectives would have yielded the ten-dimensional structure. Furthermore, the collapsing of scales observed for the grouped versions of DESII and III also involved juxtaposed scales. These data suggest that a response bias can contaminate the observed

dimensionality of the Izard instruments. The best way to address the problem would seem to involve a careful and complete mixing of the individual items.

These results identify an interesting trade-off inherent in the use of the Izard scales. If one wishes to maximize scale reliabilities, the best approach seems to entail grouping items by emotion type. However, such groupings appears to capitalize on a bias which can then contaminate the observed dimensionality of the instrument. Because of this trade-off two versions of the Izard instrument were again used in Study II. Study II utilizes the DESII with adjectives mixed and DESIII with phrases grouped.

Study II

Study II was conducted to examine psychometric properties of the DESII and III in the ad-response context. In addition, it furnishes evidence about the types of emotional experience that individuals commonly associate with ad exposure, and provides a test of the viability of Izard's ten-dimensional framework.

Method

To help subjects get in touch with the kinds of subjective experiences that advertisements may evoke, a videotape containing twenty television ads was created. The first eight ads on the tape were 1983 Clio award winners: these were selected because they seemed emotionally provocative. The remaining twelve ads were selected in pairs from six different types of programming: 1) prime time, 2) day time, 3) late night, 4) weekend sports, 5) syndicated reruns, and 6) a movie. The objective in selecting these was to create a group of ads like one might encounter in day-to-day television viewing.

The study was introduced to subjects as an assessment of how ads make people feel. They were asked to try to remember the kinds of feelings they experience during normal commercial viewing. They

Table 1
Summary of Exploratory Factor Analyses for Study I

	Adjectives grouped	Phrases mixed	Adjectives mixed	Phrases grouped
Factor Labels*	<ul style="list-style-type: none"> • contempt(3)/ anger(3)/ disgust(2) • shame(3) • joy(3) • interest(3) • surprise(3) • fear (3) • guilt(3) • sadness(3)/ anger(3)/ disgust(1) 	<ul style="list-style-type: none"> • guilt(3) • joy(3)/ interest(1) • shame(2)/ fear(1) • surprise(2)/ fear(1) • contempt(2) • interest(2) • sadness(3)/ anger(3) 	<ul style="list-style-type: none"> • guilt(2)/ sadness(2) • joy(2) • shame(2) • anger(3)/ disgust(1) • surprise(3) • interest(3) • fear(3) • disgust(1) • joy (1) 	<ul style="list-style-type: none"> • sadness(3)/ anger(3) • interest(3) • contempt(2)/ disgust(1) • fear(3)/ sadness(2) • surprise(3) • guilt(3) • shame(3) • joy(3)
Percent variance explained	75.3	69.3	69.3	74.1

*Within each column, factors are listed in descending order according to variance explained. The numbers in parentheses (1,2, or 3) indicate how many predesignated scale items loaded on the factor (e.g., "guilt(2)" indicates two "guilt" items loaded on the factor). Loadings of .60 or above were used to interpret the derived factors.

were told that a videotape of twenty ads had been prepared simply to help them recollect the types of feelings that ads can provoke. Participants were shown the complete set of twenty ads, and then were asked to describe three other commercials which they remembered as being strong "feeling producers". Next, subjects reported how frequently they experience each of Izard's ten emotions during normal ad viewing via the DESII. Following a dummy task, subjects reported ad-evoked emotions on the DESIII.

The above procedure was conducted in six undergraduate and MBA classes, yielding 180 completed instruments. While the videotape was used simply to help participants recall the kinds of feelings ads produce in them during *normal* television viewing, it seemed an interesting empirical question to see if exposure to the tape actually influenced their responses. Thus, two additional classes were run as a control group; in these the above procedure was followed, except no videotape was shown to remind subjects of the kinds of feelings that ads may produce. A total of 37 students were processed in this tape-absent condition.

Results

Reliability coefficients for each of the ten emotions ranged from .72 to .89 in the tape-present groups, and from .57 to .87 in the tape-absent condition. Alpha's in the tape-absent condition were a bit erratic, but for the main body of subjects, the reliabilities were very sound.

Table 2 displays mean scores and standard deviations for each emotion type. Table 2 thus offers

information concerning the emotions individuals are most likely to associate with advertising. The pleasant emotions--joy and interest--are the one's most associated with advertising for this group of subjects. Surprise is next in order of frequency, followed by disgust. The remainder of the negative emotions show little activation, and the low means for fear, shame and guilt indicate that these emotions may be evoked very infrequently.

Interestingly, the presence of the ad videotape had little impact: none of the means between the tape-present and tape-absent groups differed by as much as one scale point. For the DESII, the only pairs of means that are significantly different at the .05 level are those for joy and interest. Differences between means were even less pronounced on the DESIII. One might conclude from these data that both groups of subjects were providing, as requested, their sincere recollections of the kinds of emotions they experience as part of normal ad processing.

The final issue to be considered involves dimensionality--is Izard's ten-dimensional structure supported in these data? This issue was examined via confirmatory factor analysis (using LISREL VI) for both the DESII and III. Findings for the two versions of the scale were nearly identical, so only the data for DESII are considered hereafter. Responses from subjects run in the tape-absent group were *not* included. Results for tests of six different models are summarized in Table 3.

It is conceivable that advertisements do not provoke the rich, discrete emotions postulated by Izard's

Table 2
Means and Standard Deviations for Studies I and II

Questionnaire form	Study I: College Life				Study II: Advertisements			
	Version 1		Version 2		Ad Tape present		Ad Tape absent	
	adjectives grouped	phrases mixed	adjectives mixed	phrases grouped	adjectives mixed	phrases grouped	adjectives mixed	phrases grouped
Interest	10.92* (1.37)	8.11 (1.71)	11.40 (1.52)	10.76 (1.84)	9.54 (2.21)	8.92 (1.95)	8.87 (1.48)	8.73 (1.52)
Joy	9.59 (1.79)	9.78 (1.27)	10.88 (1.78)	10.42 (1.83)	9.61 (2.02)	9.16 (1.95)	8.84 (1.79)	8.57 (1.71)
Surprise	7.89 (1.94)	7.48 (2.12)	8.79 (1.85)	8.07 (1.64)	8.13 (2.39)	6.98 (2.02)	8.57 (1.68)	7.14 (1.75)
Sadness	8.95 (1.97)	8.08 (1.44)	9.23 (2.01)	8.08 (2.37)	6.47 (2.05)	5.29 (1.89)	6.51 (1.61)	4.92 (1.46)
Anger	8.39 (1.55)	8.21 (1.86)	9.01 (2.23)	8.85 (2.53)	6.48 (2.61)	5.64 (2.22)	7.24 (2.27)	6.00 (2.45)
Disgust	9.29 (1.48)	8.74 (1.60)	8.92 (1.94)	7.23 (2.11)	8.02 (2.51)	5.93 (2.22)	8.08 (2.17)	6.35 (2.16)
Contempt	7.99 (1.79)	7.57 (1.57)	7.72 (1.73)	7.49 (2.40)	6.47 (2.34)	6.18 (2.37)	6.62 (2.05)	6.73 (2.04)
Fear	9.21 (1.51)	7.39 (1.59)	8.34 (2.18)	6.59 (2.15)	5.23 (1.76)	4.71 (1.82)	5.35 (1.83)	4.89 (1.67)
Shame	9.49 (1.29)	7.02 (1.79)	8.58 (2.19)	7.04 (2.05)	5.31 (1.98)	4.98 (2.02)	5.03 (1.50)	4.95 (1.62)
Guilt	8.43 (1.68)	9.13 (1.53)	7.30 (2.06)	7.13 (1.91)	4.92 (1.72)	4.93 (1.94)	5.35 (1.57)	5.24 (2.03)

*Means and standard deviations were computed for each summed scale using three 5-point scales. Subjects were asked to indicate "how often" they had felt a particular way (e.g., "joyful") regarding the stimulus (e.g., advertisements) on a 5-point Likert-type scale for which 1 = "I have never felt that way" to 5 = "I have felt that way very often". Thus, a higher mean score indicates that the emotion was reported as experienced more often.

Table 3
Confirmatory Factor Results for the DESII in Study II

Model	df	χ^2	GFI	AGFI	RMSR
M1--two factor	401	1325.70	.577	.509	.128
M2--three factor	402	1265.98	.586	.521	.128
M3--ten factor	360	611.80	.824	.772	.067
M4*--two factor	131	393.05	.785	.719	.086
M5*--three factor	132	329.35	.818	.764	.084
M6*--six factor	120	202.69	.888	.840	.066

*The negative emotion types fear, sadness, guilt and shame are excluded in these models.

theory. As previously discussed, there are theoretical alternatives which offer a less complex "feeling construct" involving only pleasant and unpleasant affects (cf. Abelson et al. 1982; Allen and Madden 1985; Isen 1984). If this simpler conceptualization is more consistent with the phenomenology of ad response, one might expect the DESII to collapse into plain pleasant and unpleasant dimensions. This issue was examined by specifying a simple structure for the DESII around the positive versus the negative emotions, with surprise handled in two ways. For the two factor models (M1 and M4) in Table 3, surprise was treated as a possible amplifier of *both* positive and negative emotion (cf. Tomkins 1980): it was specified to load with both emotional categories. In the three factor models (M2 and M5), surprise was treated as an indicator for arousal, which is often handled as a response dimension *separate* from valence (cf. Smith and Ellsworth 1985). Confirmatory factor analysis was then used to test whether these simplistic models fit the ad-response data better than Izard's complex structure.

The first three models tested the two, three and ten factor solutions. As shown in Table 3, none of the goodness of fit indices (GFI's) surpassed the .85 convention for an acceptable fit. However, the GFI for M3 does approach the cut-off, while those for M1 and M2 do not. Here there is no indication that parsimony yields an improved fit.

To further explore the dimensionality issue, a second set of models were tested: in these, the emotion types fear, sadness, guilt and shame were excluded for two reasons. First, the means in Table 2 suggest that these four negative emotions are not commonly provoked by advertisements. We thus reasoned that participants' responses on these types might be contributing little more than error variance. Second, the three remaining negative emotions (i.e., anger, disgust and contempt) are considered by Izard (1977) to be a theoretically-related set, which he labels the "hostility triad." Thus, tests of models M4, M5 and M6 entail the hostility triad along with joy, interest and surprise. Excluding four of the negative emotions did improve model fits. However, an acceptable fit is observed in Table 3 for just the most complex model (i.e., M6).

These results indicate that Izard's instruments do capture categories of emotional responses which are meaningful to subjects in the advertising context. They

appear to reaffirm Izard's claim that the DES "reliably divides the individual's description of emotion experience into validated, discrete categories of emotion" (Izard 1977, p. 124).

Discussion and Conclusions

These studies demonstrate instruments for assessing emotion which appear to have considerable versatility. The DESII and III separate individuals' reflections on their emotional experiences into the primary types derived from Izard's theory. They possess sound psychometric properties in diverse applications, including the ad-response context. In addition, the complex structure of the instruments seems compatible with advertising response data. Thus, for those inclined to move beyond the unidimensionality of the Aad construct, the DESII and III appear to be sound instruments for studying the multidimensional richness of ad-evoked emotion. More empirical work would then seem appropriate concerning what emotion types or combinations of types are most commonly experienced during ad processing. When used in conjunction with measures of advertising effectiveness, research with the DESII and III might then begin to offer insights about emotional experiences which enhance advertising's impact (cf. Holbrook and O'Shaughnessy 1984).

It is important to emphasize that while Izard's measures do allow the researcher to *detect* diverse and sophisticated emotional experience, the crucial question regarding which of these emotions are *commonly evoked* by advertisements is far from answered. Borrowing theories like those of Izard or Plutchik should prove valuable in consumer research, but as an alternate research strategy there is also much to be said for generating our own "affective" constructs. This alternate strategy is nicely illustrated by the work of Aaker and his colleagues (Aaker and Bruzzone 1985; Aaker et al. 1986) who identify "irritation" and "warmth" as two feeling states commonly provoked by advertisements. Aaker et al.'s conceptualizations are driven by the phenomenology of ad response, rather than by basic psychological theory. Merging this emphasis on ad-evoked phenomena with the insight provided by basic theory may help pinpoint emotional constructs of special significance to consumer behavior.

Related to the above issues concerning the *frequency* of ad-evoked emotion are questions about the *intensity* of such experience. One might suspect substantial differences in intensity levels of ad-evoked emotion compared to other emotions experienced in day-to-day life. However, what emotions are experienced, and their intensity in an advertising context, are empirical matters which could be examined with Izard's (1977) original Differential Emotions Scale. Whereas the DESII was formulated to tap *frequency* of experience, the DES was created to gauge *intensity*. The intensity issue might be examined by exposing subjects to ads presumed to be emotionally provocative, and then measuring their emotional states (via the DES) immediately after exposure to each ad. This sort of study could prove helpful in attacking the difficult question of whether sophisticated and distinctive emotions really are common in day-to-day ad processing.

Data generated in Study II suggest that the emotion types joy, interest, surprise and disgust characterize the subjective experiences individuals most commonly associate with advertising. Obviously, it is just this sort of finding that needs to be examined with

additional studies before any strong inferences can be offered regarding the nature of ad-evoked emotion. We would thus advise that future studies should continue to work with all ten dimensions of the Izard instruments. However, it is noteworthy that other recent investigations of advertising emotionality have also found positive/pleasant emotional types as dominant response dimensions (Batra and Ray 1986; Zeitlin and Westwood 1986).

It is possible that the greatest discrepancy between the phenomenology of advertising response and the focal phenomena of psychological theoreticians comes within the category of negative emotions. That is, feeling states generated by *fear* or *guilt* appeals in advertisements may have little in common with the subjective experience which accompanies Izard's emotion types of the same name. Moreover, if as Isen (1984) argues, negative emotions are more cognitively complex and harder to evoke than positive affects, it may be that ads designed to produce fear or guilt simply do not "work" as often or as reliably as those designed to yield joy or interest. Indeed, the continuing debate over the virtues of irritating consumers with ads (cf. Aaker and Bruzzone 1985; Zeitlin and Westwood 1986) serves to highlight the special need for advertising research in the area of negative emotions. Because Izard's taxonomy is dominated by negative emotions, it seems to offer a useful starting point for further work.

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Behavioral Perspectives on the Economics of Information: An Overview

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Abstract

This paper summarizes the content of a special topic session that sought to encourage more interdisciplinary research on how information affects the functioning of markets.

Introduction

The purpose of this session was to stimulate behavioral research on issues and problems that have traditionally been the concern of economists from the sub-area of "Economics of Information." These economists have studied how information affects the way markets function. They have examined what kinds of information and market conditions lead to positive outcomes for consumers and society, while at the same time identifying situations where information problems can produce market failures (e.g., restrictions against advertising). Most of the propositions and predictions they have made about the effects of information are based on theoretical (mathematical) models, although there have been some empirical studies — typically making use of aggregate economic data — that have provided valuable insights and support. In general, economists have not put their assumptions about individual consumer behavior (upon which their models and empirical studies are based) to the kind of empirical testing with which consumer researchers would feel most comfortable (e.g., experiments, surveys, observation).

The notion that benefits would accrue from a dialogue between economists and consumer researchers about information has been aired on many occasions. For example, two conferences were held in the late 1970s (at Carnegie-Mellon, with a proceedings edited by Mitchell (1978), and at the University of Rochester, with a proceedings edited by Wilde (1980)) which had primary goals of fostering more interdisciplinary research on how information affects markets. This session sought to reinforce and update the appeals for interdisciplinary work made at those conferences.

Six paper presentations were made during the session. The first two papers provided overviews of the field and pointed to previous and potential consumer research studies that could help to resolve several of the issues identified by economists. The second two papers reported on recent empirical tests of specific propositions from the economics literature. Finally, the last two papers examined how certain markets have been affected by information "problems." Further information about the papers is presented below.

Reviews of the Field

The paper by Calfee and Ford (1988) contained a comprehensive summary of economics of information theory. The salient assumptions and predictions about consumer behavior contained in the theory were identified, and some of the relevant findings from the consumer behavior and cognitive psychology literature (that bear on the economists' theory) were reviewed. Opportunities for future research and implications for public policy were also covered.

The paper by Lynch and Bloom (1988) reviewed a narrower body of economic theory, focusing on the work

in the economics of advertising. An attempt was made to "translate" the arguments and propositions offered by two major "schools of thought" about the economic effects of advertising — the "Advertising=Market Power" school and the "Advertising=Information" school (Albion and Farris 1981). It was argued that the two schools would tend to disagree on how the following basic questions about consumer behavior would be answered:

1. How many advertising messages must a consumer be exposed to before he or she allows a new brand to be included in an "evoked set?" Does the number differ depending on (1) the extent of advertising of established brands, (2) the type of attribute being advertised (e.g., "new" vs. "old," intrinsic vs. extrinsic) or (3) the category of the product (e.g., search vs. experience)?
2. Does advertising affect the "weights" that consumers place on attributes when combining information to form judgments about perceived quality and perceived value?
3. Do consumers learn enough accurate information about the attributes of products from advertising to improve the efficiency with which they search? Or does miscomprehension of advertising lead to less efficient search behavior?
4. Do consumers ignore or discount information in advertising about the intrinsic attributes of experience goods?
5. Do consumers view heavy advertising as a "signal" that an experience good is high in quality and value?

Previous consumer research studies that can provide at least partial answers to some of these questions were reviewed. In addition, promising directions for future research were suggested.

Empirical Evidence

Ford, Smith, and Swasy (1988) presented a paper that examined the validity of one of the most widely accepted assumptions in the economics of information literature — the notion that products can be divided into the categories of search, experience, and credence goods (Nelson 1970, 1974, 1978; Darby and Karni 1973). One of the propositions offered by Nelson and others is that advertising for search goods should have many objective claims (since consumers can evaluate them effectively before purchasing), while advertising for experience and credence goods should have less objective claims (since consumers cannot evaluate them before purchasing and will therefore discount or ignore such claims). Ford, Smith, and Swasy (1988) performed a content analysis of a sample of print advertisements to see if the use of objective claims varied by type of good.

The Calfee and Ringold (1988) paper specifically examined the proposition offered by Nelson (1970,

1974, 1978) that consumers are skeptical of advertising claims, particularly of those offered for experience and credence goods. They reported on the results of several major public opinion polls that accumulated evidence about the skepticism of consumers toward advertising.

Potentially Problematic Markets

Zeithaml and Bloom (1988) presented a paper that looked at a set of situations where information problems can produce poor market outcomes. They argued that in markets where consumers tend to rely more heavily on extrinsic attributes (e.g., price, amount of advertising, brand name) than on intrinsic attributes in forming judgments about product quality and value, a strong possibility exists that consumers may allocate their resources in a manner that does not serve them the best. Consumer reliance on extrinsic attributes was seen as creating problems in markets where the following questions would be answered negatively:

1. Are the extrinsic attributes relied upon by consumers accurate "signals" or predictors of the other attributes of the brands?
2. Are there no other attributes that consumers value highly?
3. Is it possible for consumers to obtain information about the other valued attributes?
4. Do many sellers have the ability to look good on the extrinsic attributes relied upon by consumers?

Markets for professional services, some grocery products, and several other offerings were hypothesized to be ones where negative answers to the above questions would be likely to occur. Potential public policy remedies for these situations were also discussed.

The paper by Drumwright and Kane (1988) focused on the health care industry. They addressed whether the new forms of information about health care that have become available to consumers in recent years (e.g., advertising) have lived up to their promise. Other information shortcomings in health care were also addressed. Finally, potential public and corporate policy approaches for remedying the information problems in health care were discussed.

Discussants

The discussants for the session were two well-known economists who have both written extensively about the economics of information — Howard Beales of the Federal Trade Commission and Richard Schmalensee of M.I.T. Beales (Beales, Craswell, and Salop 1981a, 1981b) has written and spoken about the role of information in consumer protection, while Schmalensee (1972, 1978) has been a leading thinker about the economic effects of advertising.

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Economics, Information and Consumer Behavior¹

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Abstract

This paper summarizes important assumptions and implications about consumer and seller behavior that are contained in the economic theory of information. The emphasis is on interesting, testable hypotheses that have escaped the attention of consumer researchers. Some attention is also given to findings from consumer research that are relevant to the economic theory of information.

Introduction

This paper seeks to demonstrate that the economic theory of information is in many respects a sophisticated theory of consumer and seller behavior, a theory that involves much more than search by consumers and advertising by sellers. We attempt to sketch the outlines of that theory, paying particular attention to those aspects of the economics of information that have been neglected by consumer researchers. Our discussion is intended to be provocative rather than definitive, and the emphasis is on testable, but mostly untested, hypotheses about consumer and seller behavior.

Consumer researchers, of course, have long been interested in the economics of information. But the focus has been primarily on consumer search, price dispersion, the relation between price and quality, and the informational content of advertising. Meanwhile, another large body of economic literature has dealt primarily with market signaling and other theoretical solutions to the problems of cost and verification. As is demonstrated below, this literature, although not yet the focus of much consumer research, also contains assumptions and predictions about how consumers deal with the difficult problems of extracting useful information from biased sources, i.e., sellers, and how sellers attempt to provide valuable information to consumers.

This paper is divided into four sections: a brief review of those elements of the economics of information that are particularly interesting for consumer research; implications for consumer behavior; implications for seller behavior (mainly advertising); and concluding comments. Where possible we briefly note the empirical literature from consumer research relevant to the topic.

Overview of the Economics of Information

The economic theory of information assumes, like most mainstream economics, that both buyers and sellers attempt to maximize utility, subject to constraints on resources, time and so on. From this perspective, information is simply another commodity that may be produced, marketed, purchased and consumed like other more tangible commodities. This view was the starting point for Stigler's classic article that launched information as a topic in economics. He argued that consumers will gather product information up to the

point where the cost of doing so exceeds the value of further information, and that this behavior helps determine such market phenomena as price dispersion (Stigler, 1961). As important as the Stigler article was, it soon became apparent that the peculiar economic problems associated with producing and disseminating the commodity "information" require more than a simple marginal cost — marginal value model.

The first problem is that a large proportion of consumer information is distributed free by sellers in the form of advertising. Although this "free" information reduces buyers' search costs, it obviously is biased because the seller is using the message both to provide information and to persuade. Therefore, it is to be expected that consumers will be skeptical of advertising. Despite such skepticism, advertising must be worthwhile because sellers continue to spend billions of dollars on it. Thus, the first major extensions of Stigler's work examined issues associated with "verification" of advertising claims.

The verification issue formed the starting point for Akerlof's important paper on markets in which all claims are suspect. Akerlof demonstrates that when consumers cannot verify any advertising claims, one result can be a "lemons" market in which all products are of the lowest possible quality despite consumer willingness to pay for higher quality. In a lemons market there is no conflict between price and quality because both are at the lowest possible level. (Akerlof, 1970.) Akerlof's largely theoretical paper inspired a few attempts to assess empirically the tendency for lemons markets to occur in practice. (Bond 1982; Lynch, et al., 1985.)

The verification problem is also the motivation behind the development of attempts to categorize advertising claims as having either search, experience or credence qualities. Nelson (1974) wondered how advertising provides information to consumers when, in his words, "The producer is not interested in providing information for consumers. He is interested in selling more of his product. Subject to a few constraints, the advertising says anything the seller of a brand wishes." (1974, p. 729.) Nelson hypothesized that consumers will tend to be skeptical of all advertising claims, but will be least skeptical of claims about attributes that can be verified through prepurchase search activity (called "search attribute claims"), and most skeptical of claims that can be verified only after the product has been purchased and used for some period of time ("experience attribute claims"). (Nelson 1970.) He reasoned that sellers take consumer skepticism into account and therefore have an incentive to be truthful when making claims that can be verified before purchase. Consumers should therefore expect search attribute advertising to be true. Parenthetically it might be mentioned that this conclusion holds whenever the cost of evaluating the truthfulness of a claim is low, as when evaluating experience attribute claims for low-priced, frequently purchased goods.

Darby and Karni (1973) suggested that for certain technically complex products and services (gall bladder surgery, for example), most consumers can never know

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whether a claim is true even after purchase and consumption. They suggested a third category of advertising claims which they termed "credence attribute claims." Because such claims can never be verified by average consumers, it follows that consumers should be even more skeptical of credence attribute claims than experience attribute claims.

The second extension from the Stigler formulation stems from the fact that information is transmitted by sellers and gathered by buyers in ways other than those normally included in models of information search. Researchers have been puzzled for many years by the consistent empirical result that consumers do not search as much as might be expected. Consumer researchers have contributed much to this literature with their efforts concentrating primarily on consumer search, price dispersion and the relation between price and quality. (See, for example, the brief review in Ratchford and Gupta 1987; and Jacoby 1984.) Generally, this research concludes that price dispersion exists for goods of similar quality; price and quality are only weakly positively correlated and in the words of Ratchford and Gupta, "consumers appear to behave as if search costs are high." (at p. 312)

We are left with two conflicting results. On the one hand, theory with a high degree of face validity argues that consumers will search for information until marginal benefit equals marginal cost, and argues that consumers will be skeptical of advertising for experience and credence attributes (especially for high-priced products). This suggests a high level of search. But as noted above, consumers do not search much.

A potential explanation for these apparently conflicting results is that consumers perceive their current level of information is sufficient, i.e., the marginal gain from search is low no matter what the cost of search. This could happen for three reasons: consumers trust advertising to be unbiased, consumers believe there are ways of extracting useful information from admittedly biased sources, or consumers passively "search" for information while talking with friends, shopping for other products and the like. In another paper in this session, Calfee and Ringold (1988) demonstrate that consumers are indeed quite skeptical of advertising and consistently have been so over many years. Thus, the other two explanations are of great interest.

The topic of how consumers may obtain useful information from biased sources has been discussed in a largely theoretical literature on market "signals," where a signal is defined as a bit of information that can improve the predictability of a second bit of information (Spence 1973). The signaling literature first analyzed labor markets, but has since expanded to include consumer markets. The central point is that markets may allow information to be transmitted credibly because consumers understand how to identify high quality sellers and understand when sellers have an incentive to keep their promises (Spence, 1973, 1974 and 1976; Ippolito 1986a, 1986b, and references therein).

Nelson also discussed signals when stating that consumers should use the mere fact that a firm advertises, the volume of advertising and the market share of the advertiser as indicants of quality (Nelson 1974). Signalling *per se* has not been the focus of much consumer research (Kirwani 1987). But a fairly large literature indicates that consumers routinely use inference formation strategies and cues when confronted with

incomplete information. (Olson and Jacoby 1972; Ford and Smith 1987.) It would be neither surprising nor inconsistent to find that consumers also routinely use market signals.

The passive search explanation is also interesting. The argument is that while engaged in everyday activities such as talking to friends, shopping for other products, reading magazines and so on, consumers are learning incidentally and almost unconsciously about products for which they are not yet in the market. When the time comes to buy one of these products, consumers may search memory and decide they have enough information to make a decision, or at least to narrow the choices to a reasonable number (Lynch and Srull 1982).

A third economic problem with information is the difficulty of enforcing property rights. A producer of information has great difficulty controlling dissemination of his product, (witness the continuing attempts by *Consumer Reports* to restrict use of their ratings by advertisers), particularly when the main practical use of the information involves only the "bottom" line (which brand is most or least reliable overall, for example.) Closely related to this problem is the fact that information often involves externalities, i.e., spillover costs and benefits for persons who do not produce or pay for information.

Particularly notable in consumer markets are positive externalities. Both buyers and sellers are affected — buyers because, for example, search by some individuals tends to improve the market for all consumers (Salop 1976, Butters 1977), and sellers because, for example, advertised information that applies to more than a single brand may help sellers of competing brands or even competing products. Hence an important role is played by "free riders," that is, parties who do not share in the costs of production yet who enjoy benefits from such production. The effect is that the seller who gathers and disseminates information usually cannot recoup anywhere near the marginal value of his output. Externalities or spillovers can also be negative. An example is the fact that false claims by one seller can reduce the credibility of all advertisers.

A fourth remarkable economic problem with information not fully considered by Stigler is the extraordinary economies of scale associated with its production and dissemination. There are often huge fixed costs associated with the creation of information and very small marginal costs of distribution. Marginal cost is therefore often far below average cost. This fact, coupled with the property rights problem discussed above, prevents fully efficient pricing and carries the implication that sellers have an incentive to produce less than the optimal amount of information. A by-product is that buyers often must use signals because they are all that is available, even when buyers would prefer specific information.

Sketching the Behavioral Aspects of the Economics of Information

It was stated at the outset that the economic theory of information is a theory of consumer and seller behavior. In the paragraphs above we have attempted to point out some of the more unique aspects of information that affect the way information markets work. We have also attempted to describe why these peculiarities of information influence consumer and seller behavior. The sum of these effects can be described as follows.

Consumers think rationally about other actors in the market, especially sellers. They look beyond advertising claims to assess the incentives of advertisers — and expect advertisers to understand that consumers do this! Consumers will, for example, take into account the fact that advertising is expensive and will pay off only for sellers that ultimately satisfy buyers, and hence, the volume of advertising for a brand is a reliable clue to product quality. (Nelson, 1974.) Consumers do more than simply distrust advertisers. They differentially distrust advertisers, being least distrustful when the advertiser has an incentive to speak truthfully because the market will inflict penalties on untruthful behavior. And this rational behavior goes even further. Consumers realize that sellers know how consumers think, and buyers and sellers both take this into account. It is this iterative process — sellers expect buyers to expect that sellers will behave in a certain way — that allows market signals to work. This seemingly delicate process can theoretically lead to plausible market equilibria that balance skepticism and sophistication. Some empirical evidence seems to fit, an example being research on selective consumer discounting of price advertising. (Blair and Landon, 1981; Liefeld and Heslop, 1985.)

Consumers also understand how information economics works. They realize, or so the theory goes, that sellers, in an effort to avoid advertising information beneficial to competitors, will seek to attach information to their own brand even when the information would apply equally to others. Thus consumers will not necessarily conclude that competing products lack the advertised attribute. Consumers also expect that sellers will not provide all information about their products, especially deleterious information, and that as a result much product information will have to come from other sources. On the other hand, the lack of certain favorable information in advertising may be a signal that the brand does not have the positive attribute, and the brand may be downrated accordingly. (Finn, 1981.)

It is not clear that the consumer expectations described above actually exist for most consumers, or even that the net result of the behavior of all consumers is consistent with this theory. What is clear is that a number of testable hypotheses about individual consumer behavior can be derived from the economics literature. That is the subject of the next section.

Some Implications for Consumer Behavior

Several of the hypotheses and research questions about consumer behavior presented in this section have been alluded to in the literature, while others have escaped attention. We attempt to demonstrate, however, that all follow quite naturally from the theory that has been presented. The first set of research questions and hypotheses are concerned with consumers' skepticism of sellers' claims and the verification issue. The assumption that consumers are skeptical of advertising is by itself uninteresting. More interesting is the extent to which whether certain factors modulate the level of skepticism. For example, has consumer skepticism changed over time in response to, or as a prelude to, increases or decreases in advertising regulation?

Any of three hypotheses about the role of regulation appear plausible. The first is that regulatory bodies react to public concern with deceptive advertising and step up their actions accordingly. Under this explanation, changes in public opinion about the truthfulness of advertising precede and cause changes in

regulatory activity. The second hypothesis is that the public perception about the need for regulation is a reaction to increased awareness that regulatory agencies are taking action. With this explanation, the public would notice that the FTC, for example, is increasing its regulatory activities and would conclude there must be an increasing amount of deceptive advertising. Under this scenario, changes in the public's skepticism with advertising would lag changes in regulatory activity. A third hypothesis is that public opinion about the truthfulness of advertising is independent of regulatory activity. Under this explanation, the primary concern is whether skepticism is increasing, decreasing or remaining the same over time. Obviously, advertisers are vitally concerned with this issue because if the perceived truthfulness of advertising is decreasing, it will take more effort and be more costly for reputable sellers to market their goods. The paper by Calfee and Ringold in this session strongly suggests that advertising regulation has had little if any effect on consumer skepticism.

A second important set of hypotheses concern whether the degree of consumers' skepticism with advertising claims varies inversely with their ability to verify claim veracity. The economics of information literature assumes that consumers routinely examine claims and automatically array them on some type of internal claim verifiability scale. The work of Nelson (1974) and Darby and Karni (1973) leads to the conclusion that search claims should be discounted the least and credence claims the most, but no empirical evidence supporting this perspective has yet been published. As noted briefly in the prior section, the economics literature also assumes that consumers consider the price of goods when judging the veracity of a claim. The argument is again based on the market's ability to discipline untruthful sellers. For low-priced goods consumers can try the product and (in the case of search and experience attribute claims) determine whether it performs as advertised. In this situation, trial substitutes for search. Of course, this strategy cannot be used in a cost effective manner for high-priced goods or for credence attribute claims for low-priced products. Nonetheless, it is predicted that consumers will perceive that search and experience claims for low-cost goods are truthful.

No explicit hypotheses have been developed in economics about how price and type of attribute (search, experience and credence) interact. Based on the literature, however, some predictions can be developed. For example, given the six possible combinations of low/high price and SEC attributes, it might be expected that consumers are least skeptical of all about search attribute claims for low-priced goods, that high-priced search claims are perceived as second most truthful and so on ending with the prediction that consumers are most skeptical about credence attribute claims for high-priced goods. This 2 X 3 framework can be extended to include additional dimensions such as whether the claim is objective (i.e., factual) or subjective and to include covariates such as involvement or consumer expertise.

Signalling theory also leads to interesting predictions. Most obvious is the hypothesis drawn directly from the economics of information that consumers use signals appropriately. In some ways it may be premature to discuss this hypothesis since very little conceptual work has taken place identifying the types of signals that consumers prefer to use. That is,

although economists have offered some lists of signals, e.g., volume of advertising, manufacturer market share, and warranty length, no well tested theory of signals exists. Nonetheless, the idea that signals are used is so intuitively appealing that, without in any way diminishing the importance of that issue, other points can be discussed.

Most intriguing to us is the issue of how signals interact with claims. One of the clearest, and we expect, most reliable signals attached to many products is the brand name. The name Sony or IBM provides such important information to consumers that the perceived truthfulness of credence and experience claims is, we expect, enhanced tremendously. Does such enhanced credibility transfer to lesser known sellers? That is, when IBM makes a claim about what is essentially an experience or credence attribute such as productivity gains from using personal computers, are similar claims by the sellers of "clones" enhanced? Are there really, as the literature suggests, free rider effects in credence claims?

Finally, an extremely important research question involves whether consumers feel comfortable making decisions based on their current levels of product information. Suppose consumers believe that the combination of explicit information from advertising, reliable signals, and information stored in memory from other sources is sufficient to choose among products. Then policy efforts aimed at reducing search costs may show marginal effects at best. As noted above in another context, consumers draw inferences from available information. In addition, use of signals may be a simplifying strategy that reduces the cost of thinking (Shugan 1980), or partially accounts for the finding that consumers "tend to examine only small proportions of the brand and attribute information that is available." (Jacoby 1984.) Adult consumers may believe they are so experienced at extracting useful information from the market that the value of search is bound to be small. If so, this suggests the hypothesis that, *ceteris paribus*, more mature consumers will exhibit greater confidence in their abilities to interpret market signals than will less mature consumers. As an aside, it might also suggest that this type of research not be done with student subjects; they may lack sufficient experience as consumers.

Some Implications for Seller Behavior

Examining seller behavior from the standpoint of information economics raises at least two sets of implications. The first focusses on how sellers can make information credible so as to avoid "lemons" markets. Sellers have a great incentive to solve the lemons problem because sellers of average or superior products lose as much from informationally barren markets as do consumers.

A number of hypotheses arise directly from the classification of claims into search, experience and credence attribute claims. We would expect sellers of high price products to emphasize search attributes and sellers of low price goods to emphasize search and experience attributes. No seller would be expected to emphasize pure credence attributes except insofar as such claims can be made credible by appealing to unimpeachable sources (an example being the recent Kellogg All-Bran advertising campaign based on National Cancer Institute conclusions about the connections between cancer and dietary fiber.) Sellers

will also make use of third party evaluations for experience attributes, especially for high price products. Finally, reputation will be emphasized by sellers of products rich in credence and experience attributes.

A second group of research questions is concerned with signals. We noted earlier that sellers can use market signals to communicate credibly with buyers. Signals may be classified as "pure signals" and "bonds." A pure signal is simply a piece of information that implies another piece of information about a market participant. The classic example comes from Spence's analysis of labor markets, which showed that under plausible assumptions more capable individuals will invest in education as a signal to potential employers even when the education does nothing to improve job ability. (Spence 1973.) The archetype example of a pure signal in consumer markets is Nelson's model in which the sheer volume of advertising for a brand serves as a signal for consumer satisfaction with the brand (because of the role of repeat purchasing.) (Nelson 1970.)

Bonding refers to situations in which a seller has undertaken a visible investment that will be lost if he does not perform as promised in advertising claims. Thus bonding, unlike pure signals, involves incentives. (Ippolito, 1986a and 1986b.) Sellers could even find it advantageous to advertise their own incentives (as Frank Perdue does when he bemoans his fate if one of his chickens turns out not to be fresh). These points raise fascinating empirical questions, of which we mention three. One is the extent to which markets actually produce effective bonding mechanisms. Another question has to do with costs. Because bonding and signalling both impose costs — costs that are deadweight losses in comparison to a market in which all information is credible — a natural question is the magnitude of such costs. The third question, of course, is the magnitude of consumer benefits that derive from the use of bonds and other signals. Examination of these questions would do much to move consumer information economics beyond such first-order considerations as price dispersion.

A third major issue, quite different from the lemons problem, is how sellers will deal with attenuated property rights, positive externalities, and related difficulties in the economics of information. We can expect that sellers will seek to internalize the benefits of providing information by advertising, say, "Ajax chicken has less fat than hamburger" rather than simply "chicken has less fat than hamburger." Sellers will wish to "educate" consumers on such matters as the availability of unbiased third party information. We would expect such efforts to be strongly affected by the market share of the advertiser, because the education effort will tend to benefit other sellers of products that are evaluated more easily because of the new consumer consciousness. A striking recent example is a series of ads by General Motors that essentially introduces consumers to the Insurance Institute for Highway Safety and the safety statistics produced by that organization.

We might also expect advertising to "free-ride" on information from other sources. This can be done by using "inferred" claims, i.e., claims that are created in consumers' minds by a combination of information in ads and "ambient information" that consumers acquire from other sources. This has certainly happened in the recent surge of health claims for foods rich in fiber and calcium or containing little cholesterol and saturated fat. Thus "high in fiber" may convey to some consumers the

claim, "helps prevent colon cancer." This process poses many problems for advertising regulation and in fact for years the FDA banned the word "cholesterol" from ads and labels in order to prevent inferred health claims. (Hutt, 1986.) But the inferred claim process can increase the efficiency with which both product and health information are disseminated to consumers. Little is known, however, of the practical importance of these developments.

Conclusions and Next Steps

There is little doubt that the economic theory of information contains many sophisticated assumptions about how consumers search for, evaluate and use information. For the most part the crucial assumptions of this theory have not come to the attention of consumer researchers (Wright's (1986) "schemer schema" being a notable exception), while the empirical findings in consumer research, marketing and psychology have been ignored by information economists. In this paper we have endeavored to identify some of the more intriguing characteristics of information that influence information markets and to discuss the testable assumptions about consumer behavior contained in the theory.

As we see it the logical next steps to advance the theory of the economics of information are (1) to compare what is known about consumer behavior with what is assumed in the theory about how consumers obtain and use information and (2) to begin a program of research aimed at examining some of the as yet as untested assumptions and implications. Clearly, the methodological sophistication that consumer researchers bring to problems of this type can make a substantive contribution to assessing the economic theory of information.

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An Empirical Test of the Search, Experience and Credence Attributes Framework¹

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Abstract

This paper provides an operational definition of the terms search, experience and credence attributes. The paper discusses the problems encountered in developing the definitions and describes the results of an empirical test of the operationalization.

Introduction

Information economists believe that the major role of advertising is to provide information to consumers and that consumers interpret advertising appropriately and use the signals that advertising provides in their purchase decisions. The advertising-as-information perspective has been given the most impetus by the work of Nelson (1970, 1974) and Darby and Karni (1973). Central to their work is the concept that goods, or more precisely the attributes of goods, have "search," "experience" or "credence," (hereinafter referred to as SEC) properties. These properties describe the point in the purchase process when, if ever, consumers can accurately assess a product's performance.

In the years since Nelson (1970) and Darby and Karni (1973) published their now classic articles, several studies have appeared in the marketing literature that have relied on the SEC framework (Bloom and Krips 1982; Orsini 1982; Sheffet 1979; Smith 1986; Zeithaml et al. 1985). Even more importantly, policy makers at the Federal Trade Commission use concepts drawn from the Nelson and Darby and Karni works as a basis for establishing advertising regulation policy (Federal Trade Commission Policy Statement on Deception 1983; Ford and Calfee 1986). Yet, a review of the extant literature reveals that there have been few attempts to rigorously examine the validity of the search, experience credence framework (Bond 1982). This research represents a start in that effort.

The manuscript is organized as follows. In the next section we provide a summary of important concepts from the advertising-as-information literature, paying particular attention to defining search, experience and credence. Then, we describe difficulties encountered in our efforts to operationalize the SEC framework. Finally, we present the coding scheme and preliminary results of attempts to categorize product claims using the SEC framework.

Search, Experience and Credence Claims: An Overview

Nelson (1970) and Darby and Karni (1973) began with the assumption that consumers are aware that the purpose of advertising is to persuade and consequently, are aware that advertisers have an incentive to exaggerate, if not mislead consumers, about the characteristics of goods. Thus, consumers are inherently

skeptical of advertising claims and will continually attempt to assess whether advertising is truthful.

Nelson (1970) asserts that the amount of information in advertising varies directly with consumers' ability to verify advertising claims at reasonable cost prior to purchase. If consumers can assess the truth of the claim through prepurchase "search" activities, advertisers' incentive to lie about the characteristics of their goods is reduced considerably. If on the other hand, consumers cannot accurately assess the truthfulness of claims prior to purchase, or perceive that the cost of prepurchase inspection exceeds its expected value, manufacturers have a greater incentive to dissemble and consumers have less reason to believe the advertising.

Nelson coined the term "search qualities" to describe those qualities of a brand that "the consumer can determine by inspection prior to purchase" and "experience qualities" to refer to those that "are not determined prior to purchase." (Nelson, 1974, p. 730) As examples, Nelson used the style of a dress for a search quality and the taste of a brand of canned tuna fish as an experience attribute. Darby and Karni (1974) contributed the idea that certain qualities can never be verified by the average consumer. This occurs because the consumer may not possess sufficient technical expertise to assess the product's true performance, to diagnose his/her own need for the product or service, or because diagnosing a need separately from filling the need at the same time is uneconomical or difficult. These qualities were termed "credence". As examples of credence attributes Darby and Karni (1973) describe complex automobile repairs or medical services such as gall bladder surgery. In both cases the consumer is unlikely to know with absolute certainty whether the diagnosis was correct and is unlikely to have the technical expertise to assess the quality of the service provided.

As noted in the introduction, little empirical information exists concerning whether consumers perceive advertising and behave in this way. An analysis of the existing literature reveals that the validity of the SEC framework has not been empirically tested with consumers, nor have the terms "search," "experience" and "credence" qualities been defined precisely. Therefore any attempt to complete research using the SEC attribute framework, must begin by developing operational definitions of search, experience and credence attributes. This is the topic of the next section.

SEC: Definitional Issues

Before we address the issues surrounding the SEC framework it is important to note two points. First, in the past, researchers have often referred to "goods" or "attributes" of goods as having either search, experience or credence qualities. More appropriately, the focus must be on the advertising claim, rather than the attribute of the product. That is the position taken in this paper.

Second, from our perspective, the keys to having workable definitions for a SEC typology were to adhere

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to the conceptual definitions provided in the economics of information literature while simultaneously incorporating a "real world" perspective about how advertising claims are made, about levels of consumer expertise, about the extent of information available in the environment and our judgments about how consumers' react when faced with certain advertising claims. We return to these concerns in the discussion section.

SEC: Operational Issues

The definitions provided earlier for SEC qualities can be summarized as follows: Search qualities are those that can be verified easily prior to purchase by actual inspection of the good; experience qualities are those that can only be verified after purchase and consumption of the product; and credence qualities are those that cannot be verified even after purchase and consumption.

The SEC framework appears to have a great deal of face validity. Consumers can readily visualize advertising claims that can be determined prior to purchase, such as the price of the product. Likewise, they can identify claims that can only be assessed after purchase, such as whether a restaurant meal offers good value or whether a pair of shoes is comfortable. Furthermore, consumers can also identify claims they have no way of assessing, such as the quality of care provided by a local automobile mechanic. Despite this face validity, an attempt to actually use these reasonably appearing definitions in empirical research, reveals that their operationalization is much more difficult than appears on the surface. The following paragraphs address the most difficult problems we encountered in two economics of information studies.

Background

Our studies sought to determine: (1) the extent of search, experience and credence claims in print advertising and how this is related to product characteristics such as price; and, (2) whether consumers are least skeptical of search claims and most skeptical of credence claims. To realize these objectives, claims had to be categorized as search, experience or credence. This categorization activity was complicated by three general factors: ad execution issues, consumer expertise and the availability of information availability to consumers.

Ad execution issues

Advertising copywriters have an almost limitless number of ways by which to present the benefits of products. For example, print advertising can contain assertions about a product's attributes or performance or can merely imply those points, (e.g., Who's building the best American cars?); it can emphasize the brand name over the product features to provide signals about product quality; it can use humor to get attention and so on. In addition, print advertising can contain mandated information such as the tar and nicotine levels and warning information included in cigarette ads.

Because of the variety of ways advertiser have of making their points, a number of ad execution issues germane to the economics of information appear. First, since our research focuses on advertising claims, an operational definition of the term "advertising claim" was required. For the purposes of this research, an advertising claim was defined as information contained in an advertisement about (1) the existence and/or level of a product's features, (2) the characteristics of the product or the market for which it is intended, or (3) the

consequences of using the product, the benefits of the product use, and/or the values attained or emotions produced by product use or ownership. This definition excludes advertising statements that cannot be verified either because they are so vague as to be meaningless, e.g., "Things go better with Coke," because they represent mandated warning information, such as the cigarette warnings, or because they are obvious examples of puffery, e.g., "We feed the world" and other such non-claim statements.

A second advertising execution issue concerned whether claims must be actually expressed in an advertisement or need only be implied. At this stage of our research, it was decided to focus on expressed claims rather than on attempting to infer what was intended in an implied claim. A third ad execution issue concerned complex advertising statements that contained two or more claims one of which could be categorized as, for example, search and another of which could be categorized as an experience or a credence attribute claim. The statement that "With the Modified American Plan, the XX resort hotel provides gourmet meals at affordable rates," is an example of an experience attribute claim (gourmet meals) followed by a search attribute claim (affordable rates). In these situations, the complex claim was simplified to only include the most prominent single claim.

We handled the ad execution issues by limiting our operational definition of an advertising claim to expressed statements about one attribute of what a product is, does, how it is used, what benefits it delivers and the like. In this way the claim had the most clarity for the judges who attempted to categorize it as search, experience or credence.

Consumer expertise/expectations factors

There are two basic problems that had to be overcome. First, for the true experts about a product class almost every claim is a search claim while for the true novice the same claims become experience or credence claims. This is especially a problem for complex electronics products, automobiles and other durable goods. For example, a claim such as "The XX microcomputer contains the revolutionary 80386 chip," may be one that the novice can never verify while an expert could simply remove the cover from the machine and determine whether the advertised chip was there. In this study, judges were instructed to assess claims in the context of the "average" consumers' ability to verify the claim.

The second problem concerned consumer expectations about the implicit veracity of label information. Many consumers probably expect that claims regarding ingredients can be verified prior to purchase since they believe information on labels is true; even though there is no direct way for the consumer to verify the truthfulness of label information. Our approach to this issue was first, to exclude label information claims (e.g., health warnings) as an ad claim unless the dominant claim in the text explicitly featured label content. In these cases as with the other ad claims, judges were to categorize such claims in light of how they felt the average consumer would interpret them.

Information availability factors

Information availability issues encompass whether information from an independent third party about the claim veracity exists, whether the consumer knows such

information exists and the perceived cost of obtaining the information. A publication such as *Consumer Reports* may be used to verify the ingredients or physical attributes of a product as well as to assess its level of performance on any of several dimensions. In this case, information from an independent testing organization can be used by consumers to transform credence and experience claims into search. Thus, the term "search" is used to refer to more information than can be obtained by only direct inspection of the product prior to purchase.

Related to these points are the complicating factors that information about the veracity of a claim may be available either in the public domain or through another source but the average consumer may not know where to find it or may perceive that the cost of obtaining the information is too great. Thus, again what may be a search claim for one consumer may be credence for another. Consider the claim "We're the number one seller of aspirin." Information may be available from specific sources such as *Simmons Market Research Bureau*, but the average consumer would not know of the data or how to use it. Alternatively, writing to the company for information may not be perceived as low cost, reasonable information gathering prior to purchase. Hence, claims of this nature may be credence claims to the average consumer because they can not be verified at reasonable cost prior to purchase.

Finally, as recognized by the experience concept, information becomes available to the consumer through using the product. A question arises as to how much use is needed to verify a claim. At the extreme one might have to use a product for its entire life to assess a claim. For such a claim to be considered an experience claim, rather than a credence claim, we applied the criteria that the required time to verify the claim should be relatively short in comparison to the product's total usage life.

Definitions

Consistent with the preceding discussion the following operational definitions were developed:

Search claims are those claims that can be accurately evaluated prior to purchase using prior knowledge, direct product inspection, reasonable effort, and normal channels of information acquisition, such as *Consumer Reports*.

Experience claims can be accurately evaluated only after the product has been purchased and used for a period of time which is relatively short in comparison to the product's total-usage life.

Credence claims are those that cannot be accurately evaluated even after the product is used because of the consumer's lack of technical expertise or because the cost of obtaining sufficient accurate information to check the veracity of the claim is higher than its expected value. Such claims can be verified by experts.

Notice that these definitions, while somewhat broader than those used by Nelson and by Darby and Karni, are limited to verifiable claims and yet retain the essential elements of the SEC framework. The chief differences are 1.) the search category is expanded to include information available in naturally occurring consumer environments; 2.) experience is limited to usage that occurs over the beginning stages of a product's useful life and 3.) credence stems primarily from technical expertise and high cost of evaluation.

Methodology

Sample of Advertising Claims

As part of a larger study to determine the extent to which search, experience, and credence attribute claims appear in print advertising, a sample of 100 magazine ads were drawn. The population of ads consisted of all non-duplicated one-quarter page or larger ads appearing in the first March 1987 issue of the top five (in total circulation), female-oriented magazines (defined as at least 60 percent female readership). Circulation was defined as average potential ad readership (i.e., total number of subscribers times number of issues per year times average number of ads per issue). The top five magazines so defined were *People*, *Good Housekeeping*, *Family Circle*, *Reader's Digest* and *Better Homes and Gardens*. A systematic random sampling process was used to select 100 ads from the above population.

Next, up to three verifiable, expressed claims were selected from each advertisement. This selection was done first independently and then by group discussion among the authors. If the ad contained more than three expressed claims, the three most prominent claims were selected. Prominence was assessed as a function of where the claim appeared in the ad, size of the typeface, consistency with the overall theme of the ad and so on. In ads with more than three prominent claims, three were randomly selected. Where possible, complete sentences that stated the claim were taken verbatim from the advertisement. If the claim was not presented in a sentence, a declarative sentence format was created to ensure uniformity and understanding.

Categorizing the Claims

The above procedure resulted in a list of 198 claims drawn from the female readership magazines. The judges were three Ph.D. economists from the FTC and one marketing Ph.D. All were familiar with economics of information literature and all were female. The definitions provided above were given to and discussed with each judge. The "stimuli" were the list of claims along with a short description of the type of product or service the claim was for such as "frozen dinner entrees" or "automobile tires," to provide a context for the product claim. All brand identification information was removed from each claim to reduce the possible confounding effects this information might have. Although not of interest in this paper, judges also rated the objectivity/subjectivity of each claim.

Results and Discussion

The key issue for this paper is whether the judges were able to use the SEC definitions that were developed and the instructions that were given in a consistent fashion; in other words, how well did the coding scheme work and what were its weaknesses? In order to answer this question we computed the degree of agreement in classification for each pair of judges. We also examined whether individual judges differed from their peers in any consistent fashion by computing Cohen's kappa (1960). Finally, we examined individual ad claims for which there was wide disagreement in an attempt to understand post hoc what types of claims caused coding difficulties. The results of these analyses are presented below.

The percentage agreement in classification for each of the six pairs of judges (judge 1 vs. judge 2, judge

Table

		Judge 2's classification			Total
		Search	Experience	Credence	
Judge 1's classifi- fication	Search	46 (Pc=.099)	4	1	51(25.8%)
	Experience	15	66 (Pc=.186)	3	84(42.4%)
	Credence	15	17	31 (Pc=.056)	63(31.8%)
	Total	76 (38.4%)	87 (43.9%)	35 (17.7%)	198 (100.0%)

1 vs. judge 3, etc.) ranged from a low of 68 percent to a high of 73 percent, indicating that there was little difference between individual judges in use of the coding scheme. Further we were unable to detect any bias in classification between pairs of judges. For example, above is the Table for judges 1 and 2, who had 72 percent agreement $(46 + 66 + 31)/198$ is typical of the classification comparisons. As can be seen, although as compared to judge 1, judge 2 classified more of the claims as search, judge 2's non-matching responses were evenly split between experience and credence categories.

Because the 198 advertising claims are being assigned to only three categories, there may be a non-trivial amount of agreement due solely to chance. To correct for this, we also evaluated the inter-judge reliability with Cohen's (1960) kappa coefficient which reflects the proportion of agreement adjusted for chance:

$$\text{kappa} = [\%(\text{agreement}) - \%(\text{chance})] / [1 - \%(\text{chance})]$$

Chance agreement, which is equal to the sum of the joint probabilities of cells on the diagonal, for judges 1 and 2 is .34, i.e., $(.099 + .186 + .056)$. The kappas were nearly identical for each pair of judges (.52, .55, .57, .57, .58, .59), which once again suggests that no one judge was using the coding scheme in a much different way than her peers.

Unfortunately, there is no "standard" kappa level which can be used to determine whether kappa is high or low². Common sense suggests however, that the coding scheme worked quite well since, even after adjusting for chance agreements, each pair of judges agreed exactly on the categorization of over one-half of all the claims.

² To provide some perspective on the kappa values it should be noted that kappa can reach a maximum of +1 if the marginal distributions are the same for each judge. Only Judges 2 and 4 evidenced such a similarity (kappa of .57.) Of more interest is the maximum value of kappa possible given that judges differ in their marginal distributions. An estimate of this can be calculated by first determining the minimum marginal likelihood for each category. For example, using judges 1 and 2, for search attribute claims, the minimum is .258, for experience .424, and for credence the minimum was .177. Substituting the sum of these minimum values for the "%(agreement)" term in the kappa equation yields a kappa—max value of .79. Thus, the attained kappa for these judges is .73, i.e., $(.58/.79)$ of the possible kappa—max.

The evidence that no strong differences existed between how pairs of judges coded claims increased our confidence that it was appropriate to aggregate the results over all four judges. Using an arbitrary rule that a claim was successfully categorized if assigned to one category by at least three of the four judges, allowed for the assignment of 163 (83 percent) of the claims. Of these, 34.3% were classified as search, 44.1% experience, and 21.4% credence. The highest level of unanimous agreement occurred for experience claims at 69 percent. For those designated search, 59% were by unanimous agreement. The judges had complete agreement for 46% of the credence claims.

Together, these analyses suggest we were reasonably successful in developing a reliable coding scheme. Aggregating the results for the four judges allows classification of all but 17% of the randomly selected claims. There is some suggestion, however, that judges were more consistent in classifying claims as experience and less consistent in classifying claims as credence. Why this may have occurred is discussed next.

An inspection of these inconsistently coded claims and discussions with the raters revealed three issues and anomalies worth comment. First, the problem which caused the most difficulty and disagreements among the raters was the fact that despite our efforts to select and present single claims, some contained, or could be read so as to contain, multiple claims that varied as to their classification. For example, consider the claim, "X has an exquisite blend of wine and the choicest herbs and spices," (food sauce). Originally we thought this to be one claim, however, it can be read as two; a claim about "an exquisite blend" and a claim about "choicest herbs." The first claim is about an experience attribute while the second is for a credence attribute.

A second, more judgmental problem concerns whether claims are read completely literally or are discounted somewhat by consumers. The claims that, "X video provides unmatched excitement," (video) and "X's system 25 is perfect for businesses with 20 to 150 phones," (phone system) provide examples of claims that will be categorized differently depending on whether the claim is interpreted literally or not. If one assumes that consumers interpret "unmatched excitement" or "perfect," literally these claims must be categorized as credence attribute claims. If, instead consumers comprehend "unmatched" as "a lot of," and "perfect" as "suitable for," then the claims could be experience or search attribute claims. These examples indicate that the coding scheme must attempt to anticipate whether consumers will or will not discount advertising claims extensively, and whether the extent of such discounting varies by whether it is an search, experience or credence

attribute claim. To the degree that such discounting exists, some claims may be more accurately categorized as "discounted-to-experience" or "discounted-to-search" attribute claims.

The third major problem concerned whether the judges believed or knew that independent third party information existed about the claim. For some claims, a judge would pencil in a note, such as, "If *Consumer Reports* rated this it is search, otherwise it's credence." There does not seem to be a good way to handle this problem. That is, one could tell the judges, when in doubt "assume that no outside information is available" or alternatively that there is, but this while increasing consistency would not really capture what is going on for the average consumer.

Conclusions

In this paper we have attempted to develop operational definitions for search, experience and credence attribute claims and to test those definitions by having expert judges classify a randomly drawn sample of actual claims from ads appearing in national magazines. While the results of the coding scheme and instructions indicated that six out of every seven claims could be coded, it is clear that some intractable problems exist. To an extent, some difficulties are inherent in any coding of complex, real ads. More importantly, these difficulties are compounded when one is also attempting to operationalize a theoretical framework that has not been tested before.

Despite these difficulties, the coding scheme we developed worked quite well and gives encouragement to future attempts to estimate the percentage of SEC claims appearing in advertising by product category or to investigate other aspects of information economics theory such as whether consumers are differentially skeptical of SEC claims.

We must conclude, however, with a note of caution. The SEC framework is intuitively appealing, and it is understandable that FTC policy makers have embraced a theoretical framework that offers guidance regarding where to concentrate limited resources. But the implicit assumption of the information economists that ad claims can be unequivocally assigned to one category or another, and that consumers are likely to engage in the level of processing that this task would require, is a weak assumption at best. In the raucous world of advertising, statements will be made that include multiple types of claims, hyperbole will almost be the norm and different consumers will interpret the same claims in different ways. Whether the elegant SEC framework actually can explain interpretation of claims in the world of modern advertising remains an open question.

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Consumer Skepticism and Advertising Regulation: What Do the Polls Show?¹

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Abstract

This paper looks at public opinion polls on the truthfulness and value of advertising. Such data are of interest because the economic analysis of advertising usually assumes consumers are skeptical of undocumented advertising claims, and advertising regulation (such as the FTC's advertising substantiation doctrine) is justified partly as a means for overcoming skepticism. Poll results strongly suggest that consumers are deeply skeptical of advertising claims. Moreover, public opinion has remained extraordinarily constant for two decades or more. Consumer assessments of the level of truthfulness and informational value of advertising did not increase after advertising substantiation was implemented and have not declined during the relaxed enforcement of the Reagan years.

Consumer Skepticism and Advertising Regulation: What Do the Polls Show?

The subject of this paper is what public opinion polls show about consumer skepticism toward advertising claims. Consumer skepticism plays a central role in the economic analysis of advertising and the regulation of advertising. The best known economic analyses of advertising and information assume that consumers are deeply skeptical of advertising claims in the absence of credible bases for specific claims. When such a basis is lacking, consumers will disbelieve claims. A market in which no claims are believed could then reach an extremely adverse equilibrium in which only the very lowest quality products are produced (Nelson 1974; Akerlof 1970). Advertising regulation can be seen as a tool for preventing such adverse markets by making advertising more truthful. Enhanced credibility of claims is expected to bring a series of desirable second-order effects as consumers learn that advertising is more truthful and believe more of what they are told, sellers of superior products are able to advertise their superiority credibly, and sellers therefore have an incentive to improve products. All this will lead to a new market equilibrium with greater product variety, higher average product quality, and a better match between individual preferences and individual purchases (FTC 1984; Beales, Craswell and Salop 1981).

Thus two issues stand out: the natural skepticism of consumers and the effects of advertising regulation on this skepticism. This paper is concerned with both. On skepticism, we simply ask whether public opinion polls suggest that consumers are in fact deeply skeptical of advertising claims. On the question of how advertising regulation affects skepticism, some background is useful. The connection between regulation and skepticism has played an important policy role. The presumed positive effect of regulation on the credibility of advertising was

one factor that motivated the revolution in FTC advertising regulation that came in the years 1970—72 after vigorous criticism to the effect that the FTC had done little to police national advertising. (American Bar Association 1969; Cox, Fellmeth, and Schulz 1969; Pitofsky 1977.) The early 1970s saw a great increase in the resources and vigor allocated to the FTC and, most important, the implementation of the advertising substantiation doctrine. This doctrine removed the legal requirement that the FTC prove an ad is false, substituting the much lighter burden of showing the advertiser had failed to prove its claim was reasonably substantiated. The new doctrine was seen by the FTC and outside commentators primarily as a tool to make truthful claims more credible in order to bring the second-order effects just listed. (FTC 1979; Beales, Craswell and Salop 1981; FTC 1984b.) At the same time there arose with the FTC's blessing a vigorous advertising self-regulation mechanism. This mechanism, which also emphasized substantiation of claims, relied upon the presumption that the FTC stood ready to take on advertisers that failed to abide by the rulings of the self-regulation group. The apparent success of self-regulation is also attributed to the positive effects of increased credibility. (LaBerbera 1982; Zanot 1980 and the short articles therein.)

It is apparently widely believed by regulators, the advertising community and academics that the FTC's program was successful, and for precisely the intended reason: increased credibility of truthful claims. (Beales, Craswell, and Salop 1981; FTC 1984a.) The events of the 1980s have therefore disturbed a number of observers of the advertising scene. In 1982, after James C. Miller III was appointed to chair the FTC, one of Miller's first acts was to call into question the usefulness of the advertising substantiation doctrine. This aroused a storm of protest, and eventually Miller instead initiated a full review of the program that eventually led to a new FTC policy statement affirming the usefulness of the ad substantiation doctrine. (Ford and Calfee 1986.) The FTC review, which included numerous comments from the advertising trade and others, revealed two things: first, very little has been done to test the premises or effects of the ad substantiation program, and second, most commentators remain confident the program worked, simply because the underlying logic seemed impeccable. (FTC 1984a.)

Since Reagan appointees took over the Commission in 1982, however, the FTC has clearly deemphasized cases based on ad substantiation. Indeed, some critics, including a former FTC Commissioner, have argued that the ad substantiation program has nearly fallen into disuse as the Commission concentrated on minor actors and cases of outright fraud, rather than on questionable claims in national advertising. This is thought to have reversed many of the positive effects from that had flowed from the substantiation doctrine. (McGrew 1985; Pertschuk 1984.)

We have, then, two sets of predictions. One is simply that consumers are by nature skeptical of advertising claims. The second is that FTC regulation will affect this skepticism. In particular, the usual view

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of regulation predicts that before the ad substantiation program was initiated in the early 1970s, consumers were deeply skeptical of claims, sufficiently so that they would find advertising of limited use for pure information. From the early 1970s until the early 1980s, the opposite would be true: consumers would be far less skeptical and would find advertising far more informative. Finally, after about 1982, things should have reverted towards their original state of skepticism and distrust of advertising. A specific part of these predictions is that when asked about their attitudes toward advertising, consumers are likely to respond along the lines just outlined. That is, we can reasonably expect that as consumers undergo broad changes in their trust of advertising claims, they are probably aware of their own changes in outlook and in reliance upon advertising.

Tests of these competing views or of the presumed benefits of advertising substantiation policy are nearly nonexistent, an unsurprising result in view of the difficulty of detecting the predicted changes in market data. What is available, however, are the results of public opinion polls on advertising. These are of obvious interest because they should allow us to track how consumer beliefs have changed in response to fundamental changes in advertising regulation. The rest of this paper presents some of the results of our effort to examine public opinion polls of consumer opinions about various aspects of advertising.

Method

We collected data from The Roper Center for Public Opinion Research archive. The Roper Center, which is affiliated with the University of Connecticut, maintains a comprehensive library of information on public opinion, political attitudes, policy preferences, and social values. The archive contains over 10,000 surveys to which approximately 500 are added annually. Polls from twenty national survey organizations, nine state and sub-national polls, and miscellaneous special studies comprise the archive. Data can be accessed through the public opinion location library (POLL), a computer-based, question-level retrieval system designed to locate relevant questions asked nationally in the U.S. POLL can search for questions on specific topics and when a question is found, the system provides the full text of the question along with associated responses, date of poll, polling organization, sampling method, and other information. We augmented the computer assisted Roper search with a manual search to verify its accuracy and to examine additional sources.

We began by searching for all poll items from 1940 to 1987 containing the word advertising. We then examined the following: purpose of advertising; honesty or truthfulness of advertising; ethics and morals of advertising industry; usefulness or informativeness of advertising; entertainment value of advertising; sponsorship of entertainment; advertising as a nuisance; the effects of advertising; and regulation of advertising. We were of course primarily interested in items that had been asked repeatedly over time.

Success was mixed. Relatively little attention was paid to advertising topics prior to the 1960s. We did find several individual questions used during the '40s and '50s, but none were asked again. Some longitudinal data were obtained for a few items first asked in the 1960s. The vast majority of the longitudinal data, however, were collected during the 15 year period from 1973 to 1987.

On average, the longitudinal items were repeated five times over a period of eleven years. Most original data was collected by the Roper Organization, Opinion Research Corporation, or the Gallup Organization. The vast majority of studies employed a national probability sampling method and utilized personal interviews. Average sample size was 1846.

Results

We report here results of particular interest for the effects of the ad substantiation program on consumer beliefs about advertising's accuracy and usefulness as a means for gaining information. We focus on poll questions that directly address these issues. We do not discuss a number of questions on topics that arguably are closely related to advertising regulation, such as the responsibility of advertisers, whether advertising is motivated by the desire to persuade or to inform, and so on. At the end of the paper, however, we discuss two poll questions about the need for advertising regulation. The answers to these questions are remarkable, suggesting that the political impulses behind advertising regulation are something other than simply to attain truth in advertising.

Questions on the Perceived Truthfulness of Claims

Question 1 (personal interviews, Roper Organization): Now here's a list of things people have said are or should be responsibilities of business in this country. Would you go down that list and for each one tell me whether you think business fulfills its responsibilities fully, fairly well, not too well, or not at all well? Advertising honestly.

	'78	'80	'82	'84
Fully	10%	14%	10%	14%
Fairly well	23%	23%	28%	27%
Not too well	42%	41%	44%	44%
Not at all well	24%	20%	16%	15%
Don't know	1%	2%	2%	1%
Sample size	1997	2000	2000	1977

This poll extends from 1978, when advertising substantiation was presumably vigorously enforced under Carter appointee Michael Pertschuk, through the 1982 tempest over Miller's expression of doubt about the advertising substantiation doctrine, and ends in 1984 when the FTC formally endorsed the ad substantiation program even while Miller's staff declined to bring a significant number of cases. The results speak for themselves. By any reasonable measure, consumers are skeptical of advertising claims. The sum of the "not too well" and "not at all well" categories was never below 60%. Moreover, the transition from the Carter administration's activism to the Reagan administration's relative inactivism brought no discernible trend toward the view that advertisers have performed less well the responsibility to advertise honestly. In fact, perhaps the most striking aspect is the "not at all well" category, which shows greater doubt on truth in advertising in 1978 (24%) than in 1984 (15%). We shall comment on this phenomenon at the end of the paper.

Question 2 (personal interviews, Roper Organization): Now, taking some specific aspects of our life, we'd like to know how confident you feel about them. Do you feel very confident, only fairly confident, or not at all confident that . . . We can depend on getting the truth in most advertising?

	'73	'74	'75	'76	'79	'82	'83
Very confident	8%	8%	7%	9%	7%	6%	6%
Only fairly confident	36%	39%	38%	36%	38%	37%	38%
Not at all confident	49%	48%	51%	52%	52%	55%	52%
Don't know	6%	5%	3%	3%	4%	2%	4%
Sample size	1263	1998	2007	2002	2009	2000	2000

This series, which covers the entire period of active enforcement of ad substantiation and continues through the Miller chairmanship, again shows a remarkable constancy of views. About 8% are "very confident" of advertising and about 50% are "not at all confident." These results are congruent with those from the previous question. The main difference is that the "only fairly confident" category here attracted more respondents than did the "fairly well" category of question 1, a difference that is reasonably be ascribed to the extra word "only" in the question 2 category. Virtually the only detectable change over time in the responses to question 2 is the slight increase in the "not at all confident" category, an increase that started in the middle 1970s and comes mainly from changes in the "don't know" category.

Question 3 (personal interviews, Roper Organization): American business and industry has been both credited and charged with many things. I'd like to know which of these statements you think are largely true, and which are largely untrue. . . . "American business and industry Hoodwinks the public through advertising:"

	'75	'78	'81	'84
Largely true	69%	68%	74%	70%
Largely untrue	20%	23%	18%	21%
Don't know	11%	9%	9%	8%
Sample size	2011	2001	2000	2000

The contrast between this question and the last one is of course a good example of how the phrasing of a question can affect responses. One detects a smidgen of skepticism in the 70% of the population that believes advertising hoodwinks consumers. Again, the constancy of opinion over time is remarkable. The results for 1975 and 1984 are essentially identical.

The results from these three questions suggest that most consumers are skeptical of claims, that the advent of ad substantiation and more vigorous FTC regulation did little to affect the perceived credibility of advertising claims, and that the relaxing of regulation in the 1980s was similarly without effect. We turn next to a slightly different matter, the perceived usefulness of advertising as a source of information.

Questions on the Perceived Usefulness of Advertising Claims

Question 4 (personal interviews, Opinion Research Corporation): Which one of these statements do you agree with most?

	'64	'73	'78
Most advertising gives people information to help them decide what to buy	37%	28%	25%
Most advertising frequently seeks to persuade people to buy things they don't need or can't afford	54%	64%	71%
No answer	9%	8%	4%
Sample size	1021	1021	1087

This question is indirectly related to skepticism because those who find advertising less useful presumably find advertising less truthful. What the question directly suggests is a progressive deterioration of advertising's perceived usefulness, starting from a high point in 1964, a time when FTC regulation was later universally denounced as moribund, through the years 1973—78, which saw probably the greatest volume of FTC activity in ad substantiation regulation. This is contrary to the expected effect of increased advertising regulation.

A closely related question is the following:

Question 5 (Personal interviews, Roper Organization): Now let's turn to the subject of advertising. Here is a list of things that have been said for and against advertising. Would you read down that list and tell me for each one whether you agree or disagree with it? . . . Advertising provides useful information about products and services

	'74	'78	'82	'84
Agree	77%	79%	79%	77%
Disagree	18%	18%	18%	20%
Don't know	5%	4%	2%	3%
Sample size	1940	2002	2000	2000

This question, unlike the previous one, does not begin until the years of FTC activism, and continues into the Reagan years. Consumer perceptions remain utterly unchanged in the face of decreased regulation.

Questions on the Need for Advertising Regulation

Of considerable interest in view of these results are consumer beliefs on the need for government regulation of advertising. We found two relevant questions:

Question 6 (Personal interviews, Roper Organization): There are many problems facing our nation today, all of which the federal government must be concerned with. But at certain times some things are more important than others, and need more attention from our government than others. I'd like to know for each of the things on this list whether you think it is something the government should be making a major effort on now, or something the government should be making some effort on now, or something not needing any particular government effort now. . . . Trying to establish more controls on the way products and services can be advertised.

	Major effort	Some effort	No particular effort	Don't know
1974	38%	41%	17%	4%
1975	43%	37%	16%	4%
1976	41%	39%	16%	5%
1977	36%	42%	18%	4%
1978	30%	41%	24%	5%
1979	32%	42%	22%	4%
1980	27%	44%	25%	4%
1981	30%	42%	24%	4%
1982	26%	41%	29%	4%
1983	28%	43%	25%	4%
1984	29%	43%	25%	4%
1985	30%	46%	21%	3%

(Sample sizes ranged from 1987 to 2006.)

Question 7 (Personal interviews, Roper Organization): I'm going to name some things, and for each one would you tell me whether you think there is too much government regulation of it now, or not enough government regulation now, or about the right amount of government regulation now? . . . The honesty and accuracy of claims that are made by advertisers

	'74	'75	'77	'79	'80	'82	'84
Too much	6%	7%	6%	10%	7%	7%	6%
Not enough	60%	60%	60%	56%	60%	58%	53%
About right	24%	23%	26%	26%	28%	28%	33%
Don't know	10%	9%	8%	8%	4%	7%	7%
Sample size	1940	2003	2004	2004	2001	2000	2000

These two questions finally reveal some changes over time. The activist period of the middle 1970s corresponds to a greater perceived need for government action, and the relaxed regulation of the 1980s comes when consumers offer less support for action. In view of the fact that no changes in perceived accuracy or usefulness of advertising occurred during these changes, these results suggest that support for advertising regulation comes from something other than simply a desire for greater truth in advertising. What may have been at work in the 1970s was a general distrust of the motives and effects of businesspersons in general. This is consistent with the results from question 4, which indicated a strong increase between the 1960s and 1970s in the proportion of consumers who believe the primary effect of advertising is to persuade (with adverse effects) rather than to inform.

Conclusions

Poll data show that consumers have been deeply skeptical of advertising claims for at least two decades. In most polls no more than a third of respondents believed advertising was basically truthful and informative. These results seem consistent with the common assumption in the economic analysis of information that consumers are skeptical of claims from sellers unless there are clear reasons (other than the advertiser's own vehemence) for thinking the claims true. This is not to say, of course, that consumers find little information in advertising overall. Some advertising could be extremely informative. What the polls seem to show is a baseline skepticism against which individual sellers must contend in seeking to inform and persuade.

Advertising regulation, particularly the FTC's advertising substantiation program, is usually justified as a "market-perfecting" technique for making advertising more informative by making truthful claims more credible. Public opinion polls on perceived truthfulness or perceived usefulness of advertising do not provide any support for this view. Public opinion remained extraordinarily constant from the period before advertising substantiation, when supposed FTC intervention was greatly needed, through a decade of vigorous regulation by the FTC and by self-regulation groups that relied upon the FTC as a legal backstop, and on into the current decade of greatly relaxed regulation.

The reasons for the lack of change in public opinion are not completely clear. The most obvious hypothesis, of course, is simply that advertising regulation has relatively little to do with the truthfulness of advertising. This may seem counterintuitive, and in fact no one has really explored this possibility during the past decade and a half of confidence in the ad substantiation program. But the most important factors that make advertising claims credible may not include regulation, with its tendency to stumble over the subtleties of mass communication. Instead, consumers may rely upon various market "signals" that indicate when advertisers have an incentive to be truthful. (Nelson 1974; Ippolito 1986a and 1986b; and see the review in Calfee and Ford, this issue.) Thus, for example, consumers might find claims truthful when seller reputation will be hurt by false claims, or when third party verification is available. Under this view, there is little reason to expect changes in consumer attitudes toward advertising truthfulness in response to changes in FTC ad substantiation policy.

Other hypotheses also cannot be rejected on the data discussed here. Perhaps the advertising substantiation doctrine had the dual effect of pushing most advertising towards puffery, while making the remaining specific claims more credible than before. (Cf. Healy and Kassarian 1983.) Perhaps consumer attitudes toward advertising simply change extremely slowly, so that the benefits of the ad substantiation program were not yet manifest in public opinion by the time the program had begun to lose some of its force after 1981. This seems implausible in view of the rapidity with which public opinions change on so many related topics.

Indeed, what did change—and quite rapidly—were opinions on the need for advertising regulation and the tendency of advertising to persuade people to buy unneeded products. This suggests that the source of the advertising substantiation program and enhanced

advertising regulation stemmed mainly from larger political forces rather than from the economic role of advertising.

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Failures of Information in Health Care Marketing

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Abstract

The deluge of information concerning hospital care appears to have failed to prompt the positive market reforms promised by economic theory. The positive market reforms hinge on at least some purchasers making informed purchase decisions, which occur when purchasers have the motivation to acquire information, the ability to interpret it, and the incentive to use it. The three potential users of information to make hospital purchase or consumption decisions are the ultimate consumer, the professional purchaser (i.e., the insurer), and the group purchaser (i.e., the company). When the likelihood of each purchaser to make informed decisions concerning hospital care is examined, the group purchaser appears most promising.

Introduction

Health care costs, particularly those for hospital care, have been a national concern since the mid-70s when they spiraled upward with double digit increases. Economic theory suggests that information about hospital care, which accounts for 40 percent of all health care expenditures, could have pro-competitive effects on the market and lead to lower prices (e.g., Stigler 1961). Antitrust enforcement agencies such as the Federal Trade Commission and many consumer groups have argued that health care advertising could produce more vigorous competition, leading to lower fees and higher quality of care (Bloom and Stiff 1980). In fact, advertising did result in lower average prices for eyeglasses (Benham 1972, Benham and Benham 1975), eye examinations (Feldman and Begun 1978), and drugs (Cady 1976).

In recent years, numerous information programs have been instituted to help consumers shop for lower-priced hospital care. For example, hospital buying guides have been published by state organizations (e.g., the Maryland Services Cost Review Commission), business coalitions (e.g., the Utah Health Cost Management Foundation), private consumer organizations (e.g., the Center for the Study of Services), hospitals (e.g., the Council of Community Hospitals of Minneapolis/St. Paul), and employers (e.g., the Quaker Oats Corporation). In addition, hospitals spent an estimated \$400 million on advertising in 1985 as compared to an estimated \$50 million in 1983 (Advertising Age, 1985).

Despite the increase in information, hospital costs rose at four times the general rate of inflation in 1986 after relatively moderate increases in 1984 and 1985. Increases in hospital costs for 1979-1986 are compared to increases in the general rate of inflation, as reflected by the Consumer Price Index, in Table 1. Insurers estimate that the increases in hospital costs in 1986 will be translated into premium increases of 10 to 20 percent by year-end 1987.

The deluge of information about hospital care appears to have failed to prompt the positive market reforms promised by economic theory and hoped for by antitrust enforcement agencies and consumer groups. The purpose of this paper is to examine this apparent failure of information in an effort to understand the role that

Table 1

	(1)	(2)	(3)
	Annual % Change in Hospital Costs	Annual % Change in Consumer Price Index (CPI)	Rate at which % change in hospital costs exceeds % change in CPI (col. 1 / col 2)
1979	13.4%	11.3%	1.18
1980	14.2	13.5	1.05
1981	17.2	10.4	1.65
1982	13.5	6.4	2.2
1983	8.6	3.2	2.7
1984	5.8	4.3	1.3
1985	7.3	3.6	2.0
1986	7.4	1.9	3.9

information realistically can play in fostering positive market reforms.

The Economics of Information

The economic model asserts that consumers will search for information until the expected marginal cost of acquiring information exceeds the expected return. When information is readily available, the costs of search are lowered. As a result, consumers can comparison shop more efficiently and effectively. Comparison shopping enables consumers to make informed purchase decisions, which lead to more vigorous competition. The end result is higher quality at lower prices.

The economic model was validated empirically in studies of eyeglasses (Benham 1972, Benham and Benham 1975), eye examinations (Feldman and Begun 1978), and prescription drugs (Cady 1976). In each study, average prices for the products or services in question were lower in states permitting advertising than in states restricting advertising.

Behavioral Aspects of Information Search

The competitive market scenario hinges on at least some purchasers making informed decisions in which they choose the lowest-priced provider with the desired level of quality. To make informed decisions, purchasers first must be motivated to acquire information concerning the price and quality of alternatives. Second, they must have the ability to interpret the information. Third, they must have incentives to use the information in decision making. A conceptual model of an informed decision can be expressed as follows:

$$\text{Informed Purchase Decision} = f \left(\begin{array}{l} \text{Motivation to acquire information} \\ \text{Ability to interpret information} \\ \text{Incentive to use information} \end{array} \right)$$

The three components of an informed decision suggest that the perceived costs of search are determined by two factors: the cost of acquiring information and the

cost of interpreting it. The following expression represents the conditions fostering search behavior:

$$\begin{array}{r} \text{Perceived} \\ \text{benefits} \\ \text{of search} \end{array} \geq \begin{array}{r} \text{Perceived costs} \\ \text{of acquiring} \\ \text{information} \end{array} + \begin{array}{r} \text{Perceived costs} \\ \text{of interpreting} \\ \text{information} \end{array}$$

The perceived costs of acquiring information are influenced by two factors: 1) the number of providers in the market and 2) the availability of credible advertising or other information programs. When there are few providers, many people have experiences with the providers, and word-of-mouth information on all providers is more readily available (Pauly and Satterthwaite 1981). In contrast, when the number of providers in a market is large, fewer people within an individual's circle of acquaintances have experience with a specific provider, and information about all providers is scantier and more costly to acquire. In this case, advertising and public information programs could decrease the cost of acquiring information.

The perceived cost of interpreting information is influenced by the characteristics of the products or services involved. Economists have distinguished between "search," "experience" (Nelson 1970), and "credence" (Darby and Karni 1973) characteristics. Search characteristics can be ascertained and evaluated before purchase, while experience characteristics can be discovered and evaluated only after purchase as the product or service is consumed. Credence characteristics cannot be evaluated through normal use even after purchase and consumption. Instead, their evaluation requires additional costly information, probably from an expert. One can infer that search characteristics are least costly to evaluate, while experience characteristics are moderately costly. Evaluation of credence characteristics is quite costly.

Hospital Care Purchasers

Three parties are potential users of information as purchasers and/or consumers of hospital care. One is the ultimate consumer, the patient; another is the professional purchaser, the insurer (e.g., the health maintenance organization or the preferred provider organization). Yet another is the group purchaser, the company purchasing health care services directly or through insurance on behalf of its employees. Each of the parties has a direct economic or personal health stake in the hospital choice.

While physicians often both restrict and influence the patient's choice of hospitals, they neither pay for nor directly consume hospital care. We assert that parties with direct economic or personal health stakes are those most likely to use price information (or to prompt physicians to use it) to make informed decisions. Our rationale is that price carries significantly less weight in physicians' preferences than it does in the preferences of consumers and purchasers. The explanation for physicians' relative insensitivity to prices is partly philosophical and partly practical. It is philosophical in that physicians are taught that consideration of treatment costs should not influence their referral recommendations, and it is practical in that most physicians are unaware of the prices of many of the services that they order or recommend on behalf of patients. We leave an examination of physicians'

potential impact as users of information for another discussion. In this paper, we will examine the likelihood of the ultimate consumer, the professional purchaser, and the group purchaser to search for information and make informed decisions in purchasing hospital care.

The Ultimate Consumer

The ultimate consumer makes two types of purchase decisions regarding hospital care. One type is the choice of a hospital at the time of need, which is sometimes constrained by the choice of physician. The other type is the choice of a health care plan in advance of the time of need. Little direct evidence exists concerning consumer perceptions of the costs and benefits of searching for information regarding these two decisions. However, from studies dealing with consumers' knowledge of hospital prices and quality issues, we can infer the probable costs and benefits of search.

Price Knowledge

Two indicators suggested by economic theory—the degree of price dispersion and the shape of price distributions—can be used to infer how much consumers search for and know about hospital prices. Price dispersion, which economists have viewed as a measure of "ignorance in the market" (Stigler 1961), provides a rough indicator of consumer access to price information. In a study of price dispersion, Marquis, Kanouse and Brodsky (1985) calculated the coefficients of variation (i.e., standard deviations divided by means) for the products and health care services in Table 2.

The products and services were divided into two groups of approximately equal prices to enable appropriate comparisons. Note that the coefficients of variation of prices for routine health care services in the lower-priced category fell roughly in the mid-range of the measures for other similarly priced products and services. This finding suggests that consumer search for price information about routine and frequently used medical services is comparable to that for a variety of other consumer products. In contrast, the coefficients of variation of prices for hospital and surgical services were greater than for similarly priced products, as shown in Table 2. Thus, Marquis, Kanouse and Brodsky (1985) suggested that consumers were less informed about hospital and surgical prices than about the prices of other similarly priced goods and services.

The shape of price distributions also indicates the amount of consumer information. Wilde and Schwartz (1979) demonstrated that the most common point, the mode, in the price distribution depends on the number of informed consumers who price shop. If the number of informed consumers is high enough, the modal point will occur at the lower range of prices. As the number of informed consumers decreases, the modal point in the price distribution moves up to the higher range of prices. In studying the variation in medical fees within 24 states, Hsiao (1980) reported that the modal points in the distributions of prices for common medical procedures, such as routine office visits, was in the lower price range. The opposite was true for surgical and hospital related charges. Thus, the shapes of price distributions supported the notion that consumers have a relatively high degree of information about prices for routine care and less information about surgical and hospital services.

Table 2
VARIATION IN HEALTH CARE FEES AND PRICES OF
OTHER SELECTED PRODUCTS AND SERVICES

	Coefficient of Variation
Lower-Priced Products	
<i>Medical and Dental</i>	
Routine visit, GP	.23
Routine visit, general surgeon	.21
First visit, GP	.33
Subsequent visit, GP	.21
First visit, internist	.22
Subsequent visit, internist	.24
Teeth cleaned	.22
<i>Other products and services</i>	
Boarding pet (per day)	.17
Styling brush	.46
Diamond appraisal	.25
Paint	.07
Beer (case)	.08
Plywood	.10
Vocal instruction	.35
Washing pet	.13
Watch cleaning	.38
Air conditioner repair	.25
Higher-Priced Products	
<i>Medical and dental</i>	
Inguinal hernia repair, GP	.23
Inguinal hernia, general surgery	.23
Semiprivate room rate	.16
Operating room, 60 minutes	.24
Removal of tonsils and adenoids	.18
Normal delivery	.27
Appendectomy	.26
Gall bladder surgery	.18
Cesarean section	.23
<i>Other products and services</i>	
Office desk	.08
Calculator	.10
Bicycle	.04
Camera	.09
Microwave oven	.06

One explanation of the lower level of search for and knowledge about hospital and nonroutine physician prices as compared to routine office care prices involves the frequency of use, which can affect both the perceived costs and benefits of search. Because consumers can draw on their own experiences or those of their friends or family members for a routine service such as pediatric care, the costs of search are relatively low. In contrast, because hospital and surgical services are consumed infrequently, information often is not readily available from personal experience or through that of acquaintances.

The benefits of search also may be lower for infrequently used services. For example, consumers may project that the benefits from finding a lower-priced pediatrician will accumulate through repeat purchases. In contrast, consumers may believe that the benefits of searching for a lower-priced hospital will have to be reaped in one stay. In addition, consumers may perceive that they have very limited options because their choice

of hospitals is limited to the ones where their physicians have hospital privileges. The limited options could further decrease the perceived benefits of search, or they could increase the perceived costs in that selecting a lower-priced hospital could necessitate changing physicians.

The perceived benefits of price shopping for hospital care are lowered still further by third party payment. Because 90 percent of hospital bills are paid by third parties, consumers have little reason to give much thought to price. In theory, changing insurance coverage provisions so that consumers share more extensively in hospital costs should encourage them to search more. However, the results of the only study to investigate directly the effects of cost-sharing on search for lower-priced hospitals contradicted the theory. Newhouse and Phelps (1976) found that the elasticity of the room and board prices of the hospital chosen with respect to the coinsurance rate was only .05, which suggests that cost-sharing does not encourage greater efforts to search for lower-priced hospitals. In addition, front-end deductibles such as that required by Medicare for hospital care (e.g., the first \$500) probably will not encourage price shopping because price will not influence the deductible cost to the consumer. Thus, cost sharing is not likely to motivate consumers to acquire price information on infrequently used hospital and physician services.

Research concerning how consumers select nonhospital providers whose services are not covered by third parties suggests how information might interact with changes in insurance coverage to encourage price shopping. Pauly and Satterthwaite (1981) theorized that when few physicians are in an area, most people will have friends who have experienced these physicians, and information will be easier and less costly to obtain. In contrast, when the number of physicians in a market is large, information is scantier and more costly to acquire. Empirically, Pauly and Satterthwaite found the average prices of physicians were lower in markets with fewer physicians. This finding suggests that information is particularly costly to acquire in areas with many hospitals. Even if changes in insurance coverage were made to increase the benefits of search, the costs still might outweigh the benefits in markets with many hospitals.

Quality Knowledge

Although consumers consistently rate quality as the most important factor in selecting health care (Berkowitz and Flexner 1980, Boscarino and Steiber 1982, Jackson and Jensen 1984), they appear to lack knowledge about indicators of quality. For example, some patients choose to undergo surgical procedures in hospitals where they are performed relatively infrequently despite evidence that post-operative mortality rates at the hospital level are related to the number of procedures performed (Greenberg 1983). In addition, Newhouse, Ware and Donald (1981) found that few consumers were knowledgeable about physician board certification, hospital privileges or license renewal.

Hospital quality information, which is composed largely of credence characteristics, is problematic in that it has to be acquired and then interpreted. As is typical for credence characteristics, consumers cannot effectively or efficiently evaluate the technical quality of hospital care even after consumption. Evaluation, if possible at

all, requires additional costly information, most likely from health care professionals.

Research has demonstrated that when quality is ambiguous or difficult to interpret, consumers sometimes infer quality from price, assuming that high prices indicate high quality (Shapiro 1968, Grossman and Stiglitz 1976). These findings suggest that providing price and quality information about hospitals could result in consumers selecting higher priced hospitals, which would increase total hospital care expenditures.

As is often the case for products and services with credence characteristics, no simple quality measures exist for the technical aspects of hospital care, and the measures that are used are often ambiguous and subject to misinterpretation. For example, some hospitals such as Eisenhower Medical Center in Rancho Mirage, California, and St. Luke's Medical Center in Phoenix, Arizona, have advertised mortality statistics for open heart surgery. Mortality statistics as measures of hospital quality are not accurate enough to provide valid comparisons. For example, they are not adjusted for age, sex, racial and lifestyle differences or for the severity of illness of the patients admitted. In addition, the buying guides, which are prepared by independent organizations, are often so complex as to defy processing by nonmedical people. For example, the directory entitled "Hospital Prices by Case Mix Product", which is published by the Council of Community Hospitals in Minneapolis/Saint Paul, includes 33 pages of photo-reduced computer print-outs with technical terms, abbreviations and numbers. It presents information for broad diagnostic categories only. Research findings concerning how much information to give consumers to optimize decision making (Jacoby, Speller and Kohn-Berning 1974), how many alternatives to present to maximize search (Swartz and Stephens 1984), and how to format information to facilitate processing (Bettman 1975) could reduce the consumer's costs of interpreting the buying guides. However, these tactics most likely will not impact consumers' incentive to use information.

Consumers also have problems selecting health plans, which offer a barrage of options regarding cost sharing, benefits and choice restrictions. Research findings suggest that consumers do not choose plans that maximize their net expected benefits (i.e., expected benefits less out-of-pocket costs) as one would expect of an economically rational consumer. Instead, consumers tend to select plans that provide first-dollar coverage (i.e., low deductibles) and unlimited choice among providers. Fuchs (1976) reported that consumers preferred plans providing first-dollar coverage, even if their catastrophic expenses were not limited, over catastrophic coverage plans with high deductibles. Likewise, Little (1983) observed that approximately half of the employees in two different firms selected a \$200 deductible plan over a \$400 deductible plan even though the premium for the higher deductible plan was almost \$200 lower. In preferring first dollar coverage, consumers appear to want insurance for what they consider likely (but affordable) events (e.g., a hospital bill of a few thousand dollars) as opposed to unlikely, but financially catastrophic events (e.g., a hospital bill for \$250,000).

Other research has shown that consumers are likely to retain coverage that is not cost-effective through inertia (Tessler and Mechanic 1975). That is, many people do not consider all the alternatives that are available to them at annual plan renewal time.

Prospects of Consumers Making Informed Decisions

Consumers do not appear to have either the motivation to acquire price-quality information, the ability to interpret it, or the incentive to use it to make informed decisions about hospital care or insurance. The primary hindrance appears to be consumers' inability to interpret information with credence qualities, which increases the costs of search. In addition, the perceived benefits of search are not motivating, particularly with regard to price. Thus, the perceived costs of consumer information search appear to outweigh the perceived benefits. The prospects of information affecting consumer decision making in a manner that can dramatically reform the health care market are not encouraging. As a result, we turn our attention to the professional purchasers of hospital care.

Professional Purchasers of Hospital Care

The early breed of HMOs (e.g., Kaiser, Harvard Community Health Plan) appeared to be astute users of price-quality information to purchase hospital and other nonroutine care. These organizations fostered high expectations of cost containment that would put a large and lasting dent in the nation's health care bill. Before 1980 when the HMO national market share was below three percent, studies consistently indicated that HMOs reduced health expenditures per enrollee by 10 to 40 percent (Luft 1980). The reduced expenditures were realized in part through recruiting conservative practitioners and choosing hospitals based on price-quality considerations whenever possible. However, recent studies have indicated that HMOs have failed to lower hospital costs dramatically or consistently, which suggests that they have not continued to be astute users of information. For example, Newhouse (1981) found that HMO cost increases were not significantly below those of indemnity plans. The results of a 1986 survey revealed that one third of the companies reported that HMOs were more costly than their traditional indemnity plans, while 27 percent reported no substantial differences in costs (Hewitt Associates Survey, 1986). Only 40 percent reported that HMOs had been less costly.

Based on HMOs' pre-1980 record of reduced costs and their professional expertise in the health care market, one can assert that HMOs have the ability to gather and interpret price-quality information to make informed purchase decisions. Thus, an examination of HMOs' incentive to use the information in making informed decisions is warranted.

The few HMOs that fostered high expectations of cost containment were very different from the more than 500 HMOs in the market today. Perhaps the most significant difference has involved a change in HMOs' missions. The missions of early HMOs were to deliver high quality, preventive-oriented care efficiently to a relatively small group of people in a local market. In today's competitive environment, if HMOs don't achieve critical mass in the marketplace quickly, they will not survive. Thus, tactics which enable HMOs to recruit physicians, hospitals and enrollees (i.e., gain market share) can take precedence over cost control. For example, U.S. Health Care System (USHCS), a leader in the new breed of HMOs, was one of the first of approximately 20 HMOs expected to enter the New York City market. To qualify for a license, USHCS had to recruit the required number of physicians serving a large

geographical area quickly--more quickly than other potential HMO entrants. In the race to be among the first to qualify for a license, USHCS ran an advertising blitz in the New York Times to attract physicians. It is highly unlikely that the USHCS physician roster consisted primarily of conservative, prevention-oriented physicians. In a rapid pursuit of market share, the costs of gathering information can appear high, and the incentive to use it to make informed decisions can appear low.

HMOs have engaged in a similar indiscriminate purchasing behavior in recruiting hospitals. For example, upon entering the Cincinnati market, the Choice Care HMO contracted with 27 hospitals, which was in essence any hospital willing to negotiate a contract, rather than selectively choosing hospitals according to effective cost containment criteria. Initially, Choice Care met with unprecedented success, enrolling 140,000 people and achieving the highest market share of any HMO in Cincinnati. However, by 1987, Choice Care was losing millions of dollars as a result of its indiscriminate purchasing strategies. Dramatically reorienting its modus operandi, Choice Care announced that only 12 to 15 hospitals, chosen according to price, access, and vague quality considerations, would receive contracts in 1987. However, the jury is still out concerning whether Choice Care can maintain sufficient market share after drastically reducing the hospital options of its constituents.

Prospects of Professional Purchasers Making Informed Decisions

Many HMOs are pursuing market share through providing consumers convenient access to as many physicians and hospitals as are willing to sign an HMO contract. Although HMOs, as professional health care purchasers, have the ability to interpret and evaluate price-quality information, the scramble for market share has stripped them of incentives to gather and use the information to make informed purchase decisions. Other insurance plans operating as indemnity or preferred provider organizations face the same market share incentives as HMOs with even less incentive to comparison shop beyond a very superficial level. Thus, the group purchaser of health care, the employer, is the only promising user of information remaining.

The Group Purchaser

Eighty percent of private insurance is sold on a group basis through the workplace, and health premium costs average 24 percent of corporate after-tax profits (Herzlinger and Schwartz 1985). Roughly 60 percent of corporate health care expenditures are spent on hospital care. Thus, corporations spend big dollars on behalf of large numbers of employees for hospital care. An examination of the case history of Tenneco, an oil and gas company with headquarters in Houston, illustrates the costs and benefits of information search for a group purchaser of hospital care.

Tenneco employs approximately 100,000 people throughout the country, and 65 percent of its private insurance expenditures are for hospital care. The main health care needs of its employees are for psychiatric problems, cancer, and cardiovascular disease. Unlike individual consumers, corporations like Tenneco purchase hospital care relatively frequently and can draw on their own experience in making purchase decisions, which lowers the cost of search. For example, Tenneco

analyzed the claims data of its insurance carriers to identify its major sources of health care expenditures by provider. It then instituted a nationwide shopping effort for certain infrequent, expensive health care needs. For example, the company arranged to have all of its open heart surgery patients flown to Texas Medical Center in Houston, where the negotiated price was approximately \$15,000 as compared to \$37,000 at Stanford and \$26,000 at Beth Israel in Boston.

Because the group purchaser inevitably will repeat purchase even the most infrequently needed forms of health care, the benefits of search will be accrued over a series of purchases. The perceived benefits from repeat purchase can motivate companies to retain or even hire health care professionals to assess the quality of providers and guide them in purchasing high quality care at competitive prices.

Tenneco developed a form of preferred provider organization (PPO) for catastrophic illnesses, which illustrates the manner in which group purchasers can use information to purchase the highest quality health care in the nation at competitive prices. Tenneco's vice president of health, environmental medicine and safety, Dr. Edward J. Bernacki, devised and implemented a PPO with cardiovascular surgery at Texas Heart Institute, oncologic surgery at St. Joseph Hospital in Houston, cancer treatment at the M.D. Anderson Hospital, and neurosurgery at Baylor College of Medicine. At these four world premier institutions, Dr. Bernacki negotiated a 20 percent discount, which was passed on to the employee/patient. When individuals participating in Tenneco's plan anywhere in the country are diagnosed with a catastrophic illness, they call a toll free telephone number in the Houston office. The company then makes arrangements to fly them to Houston, pick them up in a limousine, and have them admitted to the appropriate hospital.

The Honeywell Corporation also provides an example of the manner in which a group purchaser can shop effectively for health care on behalf of its employees. In 1986, Honeywell offered six health care plans to the 12,500 people employed at the company's Minneapolis headquarters. The company found that the six options, one indemnity plan and five HMOs, and their varied benefits were confusing to its employees. As a result, the company hired employee benefit specialists who extensively interviewed managers of the five HMOs that Honeywell offered. After determining the benefits that Honeywell employees used, the discounts that the HMOs had negotiated with providers, and how they monitored quality, Honeywell developed its own detailed specifications for a benefit plan. The company then put the benefit plan out for bid. In 1987, Honeywell awarded the contract to two PPOs, offering only two plans to employees. Both plans provided the same benefits, but differed in terms of the choice of providers offered. Employees only had to choose between paying more for virtually unrestricted access or paying less for restricted access to "preferred" doctors and hospitals. Thus, Honeywell shopped on behalf of employees for the aspects of health care that involve complex price-quality tradeoffs (e.g., the benefit package and quality assurance). However, they offered employees the opportunity to make the tradeoff between access to providers and out-of-pocket cost, characteristics that they can understand and evaluate.

Prospects of Group Purchasers Making Informed Decisions

Corporations that purchase health care for employees are the only purchasers for whom the benefits of search appear to outweigh the costs. They alone fulfill all three of the components of an informed decision: motivation to acquire price-quality information, ability to interpret it, and motivation to use it in decision making. Through relatively frequent and repeat purchases of hospital care, group purchasers have access to the price-quality information for a wide population base, which lowers the cost of search. They also have the resources to hire professional evaluators, who provide the ability to interpret price-quality information. Because they will undoubtedly repurchase even the most infrequent hospital services, group providers will reap the benefits of purchase through multiple hospital stays and reduced group premium rates, which provide incentives to use the information.

For group purchasers to affect the market favorably, many must radically change their role in benefits provision. They must change from passive purchasers to active shoppers and shapers of alternatives for their employees. Such a change would be analogous to the shift in corporate perspectives toward support of health promotion that occurred in the late 1970s and early 1980s. Corporations shifted from passive neutrality to active proponents and facilitators of exercise and disease prevention. As active shoppers and shapers of health care alternatives, group purchasers could provide the critical mass of informed decisions needed to bring the competitive market scenario and its beneficial effects into play.

We readily acknowledge that many of the people who most need assistance with hospital care purchases, such as unemployed and retired individuals, do not have access to group health plans. Thus, they would not benefit directly from the use of information by group purchasers. However, they could benefit indirectly if group purchasers provide the critical mass of informed decisions needed to bring about positive market reforms.

Conclusion

Considering the three purchasers of health care information has led us to suggest the framework in Table 3 for identifying the appropriate target group for information about various types of health care products and services. The framework is based on two factors: 1) the frequency with which the health care service is used by consumers (i.e., low/high frequency), and 2) the number of providers available to consumers (i.e., few/many providers). To the left of the dividing line in Table 3, we propose that consumers are the most appropriate target of health care information. To the right of the line, we suggest that group purchasers are the appropriate targets.

If the frequency of use is high and the providers are few (cell 1), then consumers will be likely to use information to make informed decisions. The high frequency of use increases the perceived benefits of search, while the low number of providers reduces the perceived cost of search. Most likely, word-of-mouth information will be sufficient to bring about positive

Table

		Consumer Frequency of Use	
		High	Low
Number of Providers	Few	Cell 1 Ex: Pediatrician	Cell 2 Ex: Bone Marrow Transplant
	Many	Cell 3 Ex: Optometrist Dentist	Cell 4 Ex: Gall Bladder Surgery

economic effects. Routine primary care, such as pediatric care, provides an example. The market for pediatric care is quite localized in that people select pediatricians near their homes. In a given neighborhood, there will be relatively few pediatricians, which lowers information costs. Because consumers use the services frequently, they most likely have the ability to evaluate them. The repeat purchases resulting from the frequency of use increase the perceived benefits of the search.

However, when the number of providers increases for frequently used services (cell 3), the search costs increase in that acquiring word-of-mouth information becomes inefficient, as suggested by Pauly and Satterthwaite (1981). In this case, advertising to consumers could bring about positive market reforms. Eyeglasses, eye examinations, drugs and dental care represent frequently used services with many providers.

When the frequency of use is low (cells 2 and 4), group purchasers tend to be the most appropriate targets of information. Interpretation costs tend to be high in both cells in that infrequently used services tend to be the more complex and sophisticated ones. However, when there are few providers, word-of-mouth information could lower the search costs in cell 3 enough to enable efficient search by consumers. For example, the fact that bone marrow transplants are performed at only a few institutions nationally simplifies search. Nonetheless, the likelihood of an individual consumer negotiating a price advantage is low. The cumulative experience of the group purchaser brings greater market clout.

Most hospital care (e.g., gall bladder operations, heart surgery, appendectomies, tonsillectomies) is representative of cell 4. Information is costly both to acquire and interpret, and the perceived benefits of search are low to the ultimate consumer. Thus, the group purchaser is the appropriate target of information, which must be presented in the complex, technical manner needed to represent credence characteristics.

In conclusion, we assert that information can bring about positive economic reforms in the health care market only when the appropriate type of information is available to the purchaser-consumer most likely to use it in making informed decisions. Group purchasers are most likely to have both the motivation and the ability to acquire, interpret and use information in making informed decisions concerning most hospital care.

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Verbal Strategies for Product Presentation in Television Commercials

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Abstract

Every utterance in a commercial serves a purpose for the advertiser; many serve multiple purposes. Linguistic indirectness, by conveying some information through non-semantic channels, is frequently used to accomplish multiple goals. Indirectness is not inherently connected with deception: in terms of the fundamental communication between advertiser and viewer, any utterance not of the "BUY THIS PRODUCT" type is necessarily indirect. In terms of the onscreen interaction, product claims exhibit a continuum of degrees of linguistic indirectness. A close look at some claims shows that many indirect utterances satisfy more than one advertiser goal, leading to the hypothesis that indirectness is simply a verbal strategy for product presentation.

The Analysis of Conversational Commercials

My purpose in this paper is to make two major points about verbal strategies in commercial conversations. First, each utterance in a commercial inevitably serves a purpose for the advertiser and often simultaneously serves more than one such purpose. Second, verbal strategies in commercials, especially in presenting the product to the viewer, reflect strategies found in natural conversation in such a way that the accomplishment of multiple goals is the rule rather than the exception. While these might not seem like earth-shaking claims, those familiar with linguistic analyses will realize that these are very strong claims indeed.

These hypotheses reflect findings from preliminary research with interesting implications for further study. For example, one way for advertisers to organize conversations so that they simultaneously serve multiple purposes is to make use of utterances which, from the point of view of the conversational interchange, are indirect. Indirect utterances permit some information to be conveyed through conversational implicature and interactive frames, increasing the total information content. I will argue that indirect utterances motivated by the demands of time-constrained imitation of natural conversation are not inherently misleading. Many indirect utterances express information without deception.

Although naturally many of my findings have relevance to linguistic and anthropological traditions, they also contribute to the growing interest in linguistic features of advertising on the part of marketing scholars. Empirical research on metaphor (Jaffe, 1987 and Kehret-Ward and Emerson, 1987), on message complexity (Zinkhan and Martin, 1983), on concrete versus abstract formulation of attributes (Holbrook, 1982 and Rossiter and Percy, 1978), on message quantification (Yalch and Elmore-Yalch, 1984), on sentence length (Percy, 1981), and so on attests to the large and growing interest in this field.

Two Examples

As an example of these hypotheses, two commercial scripts have been stripped of their visual and non-verbal features. The language alone conveys enough information to both contextualize the commercial

conversation and identify the commercial intents (recognize the product and the product attributes emphasized) in the commercial. The verbal strategies of such commercial scripts, despite their compactness, provide viewers with enough information to make appropriate inferences, that is, inferences that inform rather than mislead.

SCRIPT A

- a: Terrific show.
b: Oh, it was wonderful. Well, it was nice talking to you.
a: That's the Aramis umbrella.
b: So is that.
a: You bought Aramis for your=
b: =un un
a: How about a cup of coffee?
b: Your umbrella or mine?
c: The Aramis umbrella. Your gift with any \$10 purchase of Aramis, Devon, Aramis 900 or JHL.

SCRIPT B

- a: I've been cooking chili for 20 years.
b: Well, I've been eating it for 25.
a: So we both know what makes Dennison's chili great chili. It's those firm tender beans.
b: It's that lean juicy beef.
a: Larry, all you know about beef is ropin' it.
c: People can get awfully hot over chili but on one thing they do agree..
a: It's gotta be rich=
b: =and thick=
= like Dennison's.
See how my fork stands up=
b: =fork! Now, who eats chili with a fork?
c: Dennison's. So rich and thick, there's no room for argument.

These two examples typify what I call conversational commercials. Conversational commercials have utterances sequenced in such a way that the impression of spontaneous interaction is achieved. The commercials on which I base my observations exhibit dyads, or conversation-like turn exchanges, between two presumably objective individuals. In order to be considered conversational, the commercial exchange must also exhibit thematic congruity and a minimum tripartite exchange.

The commercial message, like any other, must work on two levels: on the local level, it must present an on-screen interaction with the essential structural elements of coherence, such as introduction, body, and conclusion. On a more fundamental level, the commercial also presents the product to the viewer, serving the communicative event between advertiser and consumer. Simultaneously accomplishing goals on both levels has specific linguistic consequences on the organization of a conversational interaction. For example, in order to appear spontaneous, the exchange must be interactively justifiable, resulting in a limited set of potential roles for the speakers.

The Local Level: Presenting a Coherent On-Screen Interaction

A close examination of the turns in Script A shows that they contextualize the situation and the interactants. As the first turn, "terrific show," indicates by its truncated syntactic structure, the two speakers are engaged in a conversation; the viewer learns that this is not the initiation of an interaction but the continuation of an ongoing one. As an evaluative utterance, the turn implies that we join the speakers after they have jointly experienced some stimulus.

The second turn supports and extends the implications of the first utterance. "Well, it was nice talking to you" typically is a pre-closing conversational gambit, indicating that the speaking participant plans to terminate the exchange. Such formulaic language, here as in many other commercials, signals the salient interactive features which viewers must understand in order to make sense of the commercial as a whole. Social information regarding the relationship between the two speakers is provided by this utterance, since this formula is not used between intimates.

Paradoxically, then, the organizing introduction of the commercial employs formulaic language appropriate to the closing of an interaction. By using well-known expressions, the advertiser is able to tap on the wealth of socio-cultural information brought by the viewer to the advertising context. Thus, the first two turns in this commercial orient the viewer to the situation, providing enough information about the speakers and the context that the viewer can follow the rest of the interaction.

The opening turns in Script B function similarly to those in Script A, although they naturally differ in detail. Speaker A establishes background information in his first turn, "I've been cooking chili for 20 years." Before he can tell the viewer why this information is relevant, speaker B claims the floor and makes a competing claim, "Well, I've been eating it for 25." He appears to cut off the first speaker.

That the two speakers are not cooperatively constructing a single message is further revealed by "well" at the beginning of the second turn. "Well" is an interactive particle that can indicate in natural conversation that the following utterance somehow violates expectations. Such interactive particles are frequently used in commercial conversations and always mimic their natural distribution (see Schiffrin, 1985, for details on "well").

This impression of competition orients the viewer to the personae and interpersonal dynamics of the speakers. The disagreement continues throughout the commercial, with each speaker offering his own opinions in opposition to those of his conversational partner. It is no accident that through this disagreement, the product is presented to viewers.

Commercial conclusions also organize the onscreen event. Like any other type of closing, these conclusions wind up the present activity. This, ultimately, occurs simultaneously on both the onscreen level and on the fundamental level between the advertiser and the viewer. For example, in script A, the dramatic action occurs between two non-intimates who have just shared some activity; the dramatic conflict is whether the two will go their separate ways or remain engaged in joint activity. This conflict is clearly resolved in the last turn of one of the participants, "your umbrella or

mine," which indicates the outcome of the interaction and thereby closes the episode. The voiceover that follows this resolution is not part of the conversational exchange but a disembodied authority who informs the viewer how to get the product.

We find a similar closing strategy exhibited by script B. The two speakers competed for the floor throughout the commercials, indicated by the production of similarly constructed but lexically different claims. In the closing turns, they resolve the competition over the product (and move it to a different field). Breaking the pattern is a way of indicating that the episode is complete. Again, a voiceover closes the commercial, reinforcing the completion of the episode.

The Fundamental Level: Communication between Advertiser and Viewer

So far, I have discussed mainly how each utterance contributes to the organization of the onscreen activity, how it informs and orients the viewer not so much about the product as about the on-going activity. Each utterance also contributes on another level to the essential communication between advertiser and viewer. Individual utterances convey semantic information and sometimes encode information that is not present in the words themselves; the variation that utterances exhibit represents the variety of strategies to accomplish both types of goals.

How Utterances Serve the Advertiser

I have identified three distinct functions which utterances can serve for the advertiser: they can present the product; they can contextualize the product, product use, or product users; or they can support the product presentation (Hunold, 1987a).

For example, looking back at script A, we see that one speaker says "That's the Aramis umbrella." Such utterances present the product. In script A, only a few utterances clearly present the product. In script B, quite a few utterances clearly present the product. For example, the two speakers jointly present the product in their utterance "It's gotta be thick and rich like Dennison's". They also say that Dennison's has "firm tender beans," "lean juicy beef," and so on.

Commercial utterances often do much more than present the product. They also contextualize product use, demonstrating either situations in which product use is appropriate or indicating what kind of people use the product. The twoscripts employ contextualizers which convey such information. For example, script A indicates that people who use the product are people who are sociable, people who are active, and so on. Script B indicates that the speakers are in competition, that they are rivals, with the implication that the heartiness of the speakers is mirrored in the product. These impressions are not simply notions suggested by the commercial, they are connotations directly conveyed by the linguistic structure of the conversationally situated utterances used in the commercial.

Finally, supportive utterances contribute to the advertiser's purpose by inviting product presentation. For example, questions such as "what can I try?" and other utterances which give the floor to people who present the product support the commercial message. In script B, the voiceover says, "but on one thing they do agree." This utterance invites the speaker to present the product, as indeed is done.

Organizing Product Presentation: Direct and Indirect Utterances

For the rest of the paper, I would like to focus on the verbal strategies for organizing product presentation. Of course, commercials exhibit great variety in the ways they present products. A whole spectrum of direct, moderately indirect, and indirect utterances are found. If we look at directness in commercials, we might come to the conclusion that the only direct utterance on the fundamental level, the advertiser-consumer interaction, is of the form "BUY THIS PRODUCT." This fundamental directness must be contrasted with the many linguistically direct utterances which occur on the local level. Otherwise direct claims which straightforwardly convey objective product features ("Tab has only one calorie"-type claims) are indirect on the fundamental level because they tell you WHY you should buy the product rather than simply to BUY the product. (Many presenters are of this type: "Palmolive's great;" "I love Soup-for-One;" "Dove is 1/4 cleansing cream.") So, the linguistic directness of the local onscreen utterance must be distinguished from directness on the fundamental level. A whole range of relationships exists between directness on the two different levels.

Advertising is under conflicting pressures: long on information, short on time. One way to resolve these pressures is to accomplish multiple goals with single utterances, thus killing two birds with one stone. Indirect utterances can accomplish this. For example, "hard to believe that's one calorie" indirectly conveys factual information about caloric content while it indirectly conveys subjective information about taste. Indirectness resolves the competing demands of informing the viewer and motivating the viewer to buy by allowing a single utterance to perform both jobs. Another example of nondeceptive indirectness is in the slogan "oh Fab, we're glad there's full strength fabric softener in you." This utterance conveys information about the product and also conveys the ideal interpretation of this information (as something to be glad for).

The following exchange offers a classic example of indirectness. "Why did you buy those laxative pills instead of Feen-a-mint?" "I didn't know Feen-a-mint ever made a pill." The first turn indirectly conveys the existence of Feen-a-mint pills; the response conveys the impression that, had this been known, Feen-a-mint would have been the laxative pill of choice. While conveying these impressions, the utterances contextualize the interaction. Like many indirect claims, these are relatively innocuous.

Indirectness versus Deception

Indirectness offers advertisers a linguistic strategy for making product claims serve more than one purpose at once. Some claims that could be made directly are made indirectly in order to convey some other message at the same time. For example, the indirect "hard to believe that's one calorie" accomplishes two goals instead of the single goal of informing, had the caloric content of the soft drink been directly conveyed.

Most linguists who have noticed similar features focus on how indirectness can be misleading. Geis, for example (1982, *The Language of Television Advertising*) shows that modals reduce the advertiser's responsibility for claims. Most viewers don't notice the mitigating

modal and remember only the claim, with the result that they are misled. While it would be foolhardy to suggest that indirectness cannot or never does mislead, the opposite is also true: indirectness does not automatically lead to deception. Unfortunately, not all scholars recognize that indirectness per se is neutral in terms of deception.

Naturally, a problem from the advertiser's point of view with indirectness is that the addressee might miss some point, either deliberately or accidentally. This potential problem can create particular concern in advertising, when success entails the consumers' getting of the point. However, indirect utterances do more than merely convey facts. They actively contextualize the utterance, thereby providing information of a different but not less important sort. They contribute crucially to persuasion and consumer attitudes toward the product. In other words, indirectness in commercials is simply advertisers doing with commercial language what people in natural settings do with natural language: when there is a need to accomplish several goals at once, indirectness is used.

What is deception, then? There is every reason to believe that both locally direct and indirect claims can potentially mislead. Deception appears to result from a combination of features which may but does not automatically include indirect claims.

Suggestions for Empirical Research

Indirectness operates differently on the local level than on the fundamental level. On the local level, utterances can be identified as linguistically direct or indirect. The identification of an utterance as linguistically direct or indirect on the local level is meaningless in terms of the message on the fundamental level. On the fundamental level, all advertising utterances not of the BUY THIS category are indirect, rendering the simple identification of a claim as indirect irrelevant as to whether or not that claim is potentially deceptive. Deception results when reasonable inferences based on local level utterances, whether direct or indirect, do not match the realities of the product offered by the advertiser (Geis, 1982). Deception is NOT an inevitable result of indirectness, which is a legitimate way of conveying advertising information (Hunold, 1987a).

A number of obvious questions arise. What evidence is there that viewers respond to the information conveyed by indirect utterances? Under what pragmatic or contextual conditions do direct or indirect utterances lead to deception? Can possible strategies be further refined so that viewers will have predictable responses to them? A pilot study focusing on consumer response to variation in conversational features of commercial scripts is already underway. The hypotheses in this paper lend themselves to empirical testing; evidence from such testing has the potential of contributing greatly to marketers' understanding of the effect of verbal behavior on the persuasive process.

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Pragmatic Dimensions of Advertising

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Abstract

This paper focuses on the interactive relationship between commercials and viewers, and discusses how pragmatic dimensions of everyday talk are constituted in commercials. The paper serves as a discussion for the session "Linguistic features of verbal advertising messages."

Introduction

This session highlights the fact of structural meaning in the context of advertisements. Not only do words denote conventionalized semantic meaning, but the way words are put together by an individual and among individuals also have conventionalized meanings. Ways of speaking, to use Hymes' phrase, set up a relationship among interactants that simultaneously reflect and create social roles and provide the interpretative frame for understanding verbal behavior. This session has specified a number of structural components: Indirectness of utterances, paralanguage, intonation, and syntactic structure. My purpose here is to place these rather specific analyses in a broader context.

The fact of structural conventions is not newly found. Proscription on speech forms is as old as language itself, in which a scale of good-better-best is applied in evaluative terms by disciples of Webster (cf. Miss Fidditch, Joos 1964). Such proscription reifies social status--and it is this indexical function of language that is most accessible to lay audiences. Today, dialects are airline tickets, both can be upgraded.

Less accessible to the collective consciousness are structural conventions that are grounded in interaction. Some have seeped through. Many a corporate executive now goes through an instructional process on how and when to speak, gesture and gaze to maximize persuasion, solidarity, authority, etc. The Yes Dating Service in Chicago offers instruction to singles on how to conduct themselves in conversation--gaze, listening stance, types of questions, etc. My favorite is a proscription on interrupting: Nim, a 2 year old chimpanzee taught sign language, was thought not to have understood the fundamentals of language, in part, because he interrupted his teacher too much (Terrace, Petitto, Sanders and Bever 1979).

Pragmatic functions of other structural components of interaction may be less intuitive but no less meaningful. The distributions of phonetic variants such as post-vocalic R, pronominal usage (e.g. T and V forms), lexical items, or anaphoric devices, are as based in the socio-cultural dimensions of interaction and discourse as speech acts, whose conventionalized meaning is overt. Such are some pragmatic components of everyday talk.

At the core of interaction, is the concept of action. Reference, for example, is not simply the relationship between words and things or ideas, but constitutes the speaker's action--limited by prior discourse and situational context. This makes linguistic, conventional, and conversational implicature critical analytic dimensions of discourse. Each type of implicature lets hearers interpret words, phrases,

gestures, winks and twitches by rules based in language, social knowledge, and conversational convention.

Advertisements, and the system of advertising, are no less dependent on pragmatic meaning. However, the interaction constituted by a commercial is different from everyday talk. Advertisements depend on the participation of a silent partner-- the viewer. And we might ask what dimensions set up the relationship between viewer and commercial. It is this relationship that bears analysis, and it is no less dependent on pragmatic meaning than face-to-face interactions.

Commercials set up the viewer in 3 roles. These are viewer as interlocutor, in which the viewer is a pseudo active participant in the commercial; viewer as eavesdropper in which the viewer is not directly addressed but 'hears' the interaction nonetheless; viewer as audience, in which we view a performance. The last category will not receive much discussion here, but refers to commercials that key (in Goffman's terms) theatrical frames. The 'night belongs to Michelob' campaign is one example.

Viewer as Interlocutor

The viewer as interlocutor simulates a face-to-face, speaker-hearer interaction, in which the interlocutor listens, rather than verbally contributes. (One can imagine the viewer back-channeling with 'yeah,' 'um-hmm,' etc.) The speaker is often an announcer, taking on the role of the objective expert. Alternatively, the speaker may be a testifier, taking on the role of subjective consumer. In both cases the viewer participates in a 'conversation,' bringing presuppositional baggage to the conversation that allows him or her to understand what the speaker is saying. The content of the presuppositional suitcase varies, depending on the role set up by the speaker.

Coleman's paper focuses on how a spectrum of prosodic devices--from intonation patterns, tone groups, to voice quality--sets up the speaker's role. Her analysis is dependent on an indexical relationship between the ways words are uttered and socially constituted roles. We understand a person as an announcer by the cadence of voice, as well as the sentential structure, or the visual appearance (if any). Likewise, we recognize scientists, doctors, flirts, etc. We might call these conventions unmarked or presupposed. It is due to the existence of presupposed indexical forms that deviations gain significance. Deviations are marked and equally indexical; by their use index another role, and thereby a shift in the relationship among interactants. Deviations are performative. By use of marked and unmarked devices, an announcer can epitomize the distant but trustworthy oracle of information as well as the warm, trustworthy (I'm-like-you) person. The latter establishes solidarity with the viewer which is otherwise not accomplished.

Coleman's paper convinced us that voice is a critical pragmatic dimension of commercials. Kehret-Ward demonstrates that syntax is equally significant. It is a well known fact in discourse analysis, that speakers mark information in a variety of ways: indicating topic, beginnings or endings of speaking turns, special emphasis, or as Kehret-Ward noted, new information.

Research on the marking of information indicates that a number of devices can mark given/new status, including use of definite NP's, pronominals and cleft sentences. Prosodically, new information can be marked by pitch prominence.

Kehret-Ward demonstrated that syntactic marking of information as new can have a positive effect on claim evaluation. Specifically, when motivation to process is low, and other information is not compelling, e.g. source of information, marking of information as new is a far more effective verbal advertising strategy than marking it as given.

Kehret-Ward links her findings to cognitive processing, arguing that the syntactic device motivates central rather than peripheral processing, which in turn motivates cognitive elaboration. While I cannot comment as a cognitive psychologist, I will comment as a discourse analyst.

In the context defined by an announcer-driven advertisement, the task is to engage us, the viewers, in figurative dialogue. However, unlike naturally occurring face-to-face interactions, we can choose not to participate. Syntactic marking which catalyzes our attention motivates participation. This is no small feat when the product category being advertised lacks both product differentiation and consumer interest-- what I call 'soap ads.' From an interactional perspective, then, Kehret-Ward's paper demonstrates that syntactic marking is a pragmatic device not to be ignored.

Viewer as Eavesdropper

The second broad role of the viewer set up by commercials is viewer as eavesdropper. Here, two or more interlocutors are present within the commercial. Success of the commercial is dependent on the degree to which the interaction is logically, conventionally and conversationally coherent. We, as eavesdroppers, understand what is going on through the ongoing actions, and reactions of the commercial's participants.

It is critical to emphasize, as Hunold does, that conversational utterances are multifunctional. Insofar as things are said by someone, then the choice of lexical items, syntax, intonation or paralanguage become signals of meaning, in addition to the semantic. The meaning of an apparently factual declarative statement varies depending on who utters, who hears, what is going on, and what is presupposed. Is the statement "It's cold in here" a literal description of temperature, a comment on figurative temperature (e.g. tempers of people in a room), a request to shut a window, a joke about air conditioning, or so on.

As Hunold states, commercials appropriate many devices of natural conversation to set the frame for the commercial's interaction, including speech acts. By their use, we understand the relationship of participants to each other, their social roles, or social status. Within this context, a product's symbolic and utilitarian properties are communicated. To follow Hunold's example, Aramis transforms what would be acquaintances into potential friends. This is signaled linguistically, from the formal "well, it was nice talking to you" to the casual "how about a cup of coffee?" and the joking "your umbrella or mine?" (Note, the shared experience of seeing the 'show' is an insufficient catalyst for further conversation, in contrast to the shared experience of using Aramis.)

Hunold argues that indirectness of product claims is doubly functional for advertisers: It provides a means

for making local interaction coherent, and also to pack motivations for purchasing the product into short time frames. I would propose that the primary purpose of such an advertising strategy is to place the product in a context of meaning that is otherwise elusive. That is, product benefits are not simply of the utilitarian sort: They have symbolic meanings that are best communicated by socio-cultural contextualization, (e.g. 501 blue jeans make me cool, FAB makes me a responsible mother).

Hunold further argues that indirectness per se is not misleading. In a benign sense, this is true. Indirectness is simply a convention accessible to natives. The range of meanings of any indirect form is vast. At the same time, our interpretation is dependent on context, part of which is defined by the advertising frame of selling, part of which is defined by conventional and conversational implication. If, as a function of pragmatic implication, we as hearers, believe something to be true, then surely commercials are accountable.

It is interesting to note that while commercials often try to mimic naturally occurring interaction, they consistently violate discourse-driven rules of coreference. That is, once a product has been introduced and under discussion, anaphoric references are far less frequent than we would expect. Instead, full brand names are iterated throughout commercials--balancing a need for coherence at the local level, with a need to stimulate brand recognition.

Conclusions

I have discussed these papers as a discourse analyst, arguing that the pragmatic dimensions of face-to-face interaction are constituted in commercials. First, commercials patently and selectively use pragmatic devices of everyday talk. Second, commercials set up interactions with viewers, interactions which receive relatively little analytic attention. It would be of interest to determine how commercials motivate a spectrum of speaker-hearer roles as a function of product category, and which prove most compelling to viewers.

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Two Meanings for Transformation

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Abstract

The use of the concept of Transformational Advertising in this session of the ACR conference and in earlier work is reviewed and a proposal is made to distinguish between two potentially differentiable uses of the term. The two concepts are defined, and the value of each concept is suggested.

Introduction

One of the ways we make progress in the inexact science of consumer behavior is by refining language. There are times when a promising term is determined, after long reflection and testing, to be making no new distinction. We seem to be discovering, for example, that "involvement" is a term we did not need because its work is done by other terms. I want to argue that precisely the opposite is the case for Wells' (1980) distinction between information and transformation. Far from making a redundant distinction, I shall claim that this language makes two distinctions, both new and both important, but so different that perhaps we should mark them with two different terms.

In this paper I shall review the senses in which various authors have used the idea of transformation in advertising, and explicate the two meanings which need to be distinguished. Next I shall consider transformation as a process involving inference.

The Two Uses

In this special topic session and elsewhere it seems that transformation is used sometimes to refer to a method of argumentation, and at other times to a consequence of argumentation. The reason why it is vital to be alert to these two uses is that, as I shall argue, it is by no means clear that a transformational argument is necessary or sufficient for a transformational effect. If this is so, it is fatal to define the argument mode by its effect, or to anticipate the effect as a consequence of the argument mode.

1. A Distinction Among Arguments

The concept of a transformational argument introduces a *distinction among ways of making claims* in advertising. Wells (this session) distinguishes between lectures and dramas, and in 1980 between informational and transformational advertisement. Boller (this session) uses the term narrative advertisements for the transformational pole of the distinction. Deighton (1985) attempts to identify the form and structure of arguments that can be called transformational.

The common idea that seems to underlie these usages is that, while some advertising makes explicit literal claims or assertions, telling its audience quite unambiguously what the advertiser wants it to believe or to feel (lecturing it), other advertising tells a story from which the claim has to be inferred. Instead of challenging an audience's beliefs directly, the transformational approach is to depend on a carefully spun tale to induce a "willing suspension of disbelief" (Coleridge 1817: 1967), in which the audience can come to believe new ideas or feel new sentiments without the discomfort of yielding up old ones. Speaking

metaphorically, the audience "entertains" the idea in the story/ad, and the more entertaining, congenial, harmonious or agreeable the guest, the more likely it is to be invited to stay.

Informational appeals are sometimes distinguished from transformational appeals by arguing that the former are claims about the product and the latter are claims about the experience. Often informational advertising does make product or attribute claims, and transformational advertising does talk about the experience. But the correspondence is spurious: it follows only because an experience is usually more elusive, harder to pin down in common language, than a product feature. The comparison that matters is between concrete and abstract claims, and between explicit substantiation on the one hand and substantiation by instantiation on the other.

Similarly, the distinction being made here is not the distinction between functional and emotional claims, think and feel claims (Vaughn 1985) or instrumental and hedonic appeals (Hirschman and Holbrook 1982), although often these pairs will correspond to informational and transformational arguments respectively. Again the correspondence occurs because often (but not always) our language is more competent to describe function than emotion. The contrast I want to make is between that which can be said and that which must be shown because language is inadequate for the task.

When the consumers and marketers share a language to say what benefits a product category is supposed to deliver, and how to judge whether a brand in fact delivers, then informational arguments can be used. Thus Carlton cigarette advertising says "Carlton is lowest," and substantiates this concrete claim with explicit data on tar levels. It does just one thing; it claims the brand is best in a well-defined contest.

Transformational arguments, on the other hand, do two things: first they define the contest and then they present the winner. The contest in the cola wars is hard to articulate. Loosely, the choice seems to be between the traditional/authentic values of Coke and the claim of Pepsi to the values of a new generation. These are abstract claims that have to be identified and then rendered vivid by the craft of the storyteller: the meaning of the category has to be transformed. Marlboro cigarette advertising first identifies a benefit that is hard to reduce to words but has to do with male assertiveness and confidence. It then presents the brand as a means to achieving that end, perhaps the only means to achieving that precise end.

The value of this distinction among arguments lies principally, I think, in its implications for measuring the effectiveness of communications. Much advertising testing treats comprehension of copy points as an important antecedent of persuasion. Audiences are often asked to replay the "main point" of a commercial. A transformational argument will fail this test by definition: there is no concrete "main point", and the transformational style is used precisely to the extent that the brand's appeal is not reducible to everyday language.

Second, attention to this distinction can help to indicate when advertising tests on rough (storyboard or

animatic) executions will be valid predictors of the persuasiveness of finished executions and when they will not. If persuasion depends on the appeal being "entertained" in the sense I have used it, as it will for transformational arguments only, then the critical determinant of persuasion is the entertainment value of the commercial.

Third, it seems a plausible hypothesis that, as Wells (1980) proposes, transformational arguments require more repetition to be effective than do arguments which prevail by the sheer weight of logic. Just as a story accrues plausibility by repetition and familiarity, so repeated exposure to the story line of an advertisement may build its influence on the way the consumer interprets the choices in a market.

2. A Distinction Among Consequences

The other phenomenon discussed in Wells' writings is the *transformation of experience*. Here, the term makes a *distinction between consequences* of advertising. Transformation of the consumption experience is the theme of Puto and Wells (1984), Rossiter and Percy (1987), and Petras and Puto (this session). However one must be careful to distinguish this use of the term "transformation" from the ordinary concept of persuasion. Every successful commercial has some effect on experience. At the very least it leads the consumer to expect that the experience will be rewarding, and as the long literature on consumer satisfaction indicates, experience is changed by these expectations. Bayes' Theorem, in fact, suggests that it would be irrational not to modify what we learn from experience to reflect prior expectations.

If all these effects are "transformation", then is successful advertising ever *not* transformational? If we merely show that an advertisement can change the level of satisfaction with a product, whether by associating emotional values with the experience or in any other way, we have not described a phenomenon that needs to be marked with a special label. On the face of it, it is just persuasion.

If, however, we can show that an advertisement can change the value of experience without having had any prior effect on expectations, then we have a curious phenomenon worthy of identification. There is evidence (see the 1986 ACR special session on delayed persuasion and Wells' (1986) Fellow's address to that conference) that advertising can affect experience in this way. It is this form of influence that I would like to propose we call the transformation of experience.

To illustrate, if you own a painting which you enjoy and believe to be by Picasso, and then receive a document informing you that the painting is a forgery, the document will almost certainly change the experience of viewing the painting. If you own another painting and attend art appreciation classes, it is likely that the classes will also change the experience of viewing the painting. This illustration has two points to make. First, both alterations of the consumption experience are caused by information (lectures in Wells' terms), so that the drama form is not a necessary condition for change in the consumption experience. Second, the illustration contrasts a change in experience that is mediated by a change in expectations (news of the forgery) with a change in experience which is mediated by no change in expectations but rather by education in how to engage in the experience (the art appreciation course). The first illustration is a case of persuasion. If the document

announcing the forgery is persuasive (alters beliefs) then the experience changes. The second illustration is a case of transformation. The lecture does not have to be persuasive to alter the experience. It has merely to influence what the audience attends to during subsequent experience with art. Further, the lecture will not work until the audience has some art to look at. Experience is indispensable for transformation to occur, but not for persuasion by changes in expectation.

Transformation deserves to be identified as a discrete persuasion phenomenon because it employs conceptually discrete persuasion mechanisms. Persuasion does not depend on the audience's yielding to the argument contained in the message, but on the audience's accepting the frame on sense-making proposed by the communicator.

A theory of transformation must deal with the way in which communications can affect what consumers attend to and encode during experience, and what aspects of experience they retrieve during subsequent choice. It might consider how communications affect abductive inference (the process by which hypotheses come to be entertained) and how they affect inductive inference, for example facilitation of the "aha!" experience in which claims previously learnt but not believed are recognized in experience, precipitating a chain of recall and inference shaped by the prior communication. It seems likely that a theory of transformation will be complex, because it is likely that there are many ways that communications can alter sensemaking without altering prior expectations.

Measurement of transformational effects poses problems which cannot be solved by orthodox advertising pretesting methods. The opportunity to have experience must be built into the testing environment if the ability of the communication to alter sense-making is to be measured.

Conclusion

The term "transformation", as it is being used increasingly by researchers in consumer behavior, confounds two topics, transformational argumentation and transformational effects on experience. If transformational argumentation always resulted in transformation of experience, or if transformation of experience could only be achieved by employing transformational argument, then one term alone would suffice. But that seems not to be so. For conceptual clarity it might be better to follow Wells' use of lectures and dramas to make the first distinction, and reserve the term "transformation" for the latter distinction.

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Bridging the Gap: The Challenge of Integrating Consumer Behavior Research with the Practice of Advertising

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Abstract

This paper discusses the interface between consumer behavior researchers and advertising practitioners. Academic and advertiser perspectives are examined which serve as the basis for the development of a communication gap between the two groups. Suggestions are made to consumer researchers regarding the building of research bridges which will allow for theoretically grounded research that is also useful in advertising design and implementation.

Introduction

A primary goal in the discipline of consumer research has been the understanding of how marketing communications influence consumer decision making processes. Much research and many researchers have been involved in the formulation of concepts and theories which explain the development of memory for advertisements, the development of attitudes toward advertisements, and the role of advertising in creating brand attitudes and ultimately in making product choices. Yet despite the plethora of research and theorizing in these areas, it seems that little of this knowledge is being effectively communicated to the advertising creatives who might best put it to use.

The purpose of this paper is to discuss why a communication gap has developed between advertising practitioners and consumer behavior researchers, and to offer suggestions to consumer researchers regarding how their research can contribute both to theory building and to advertising practice. Finally, one stream of research will be discussed which serves as an example of the development of such a research effort.

Research Orientations

In order to understand why a communication gap exists between consumer behavior researchers and advertising practitioners one needs to look only at the underlying basis for research in the two groups. Consumer behavior researchers, particularly those who make their careers in the world of academics, do research primarily because they are intellectually curious. They want to understand, for example, *why* one advertisement leads to better memory or a more positive attitude than another ad. In general, they want to understand how the consumer's mind works before, during and after a consumption decision process. Advertising practitioners, on the other hand, are faced with real world situations and problems for which they need an answer quickly and which may or may not be recurring. They need to know, for example, which of two advertisements will lead to the more positive attitude for their product. Research conducted by advertising agencies to support their efforts has, therefore, focused on *what* creates attention, increases readership or improves recall (see, for example, Ogilvy 1983, pp. 158-166; O'Toole 1981, pp. 163-169). In general, advertising practitioners are more concerned with what works best in a given situation than with why it worked.

This is certainly not the first time the distinction between practitioner and academic research orientations

has been drawn. In an Association for Consumer Research Conference in 1985, a lengthy session titled "Whither ACR" discussed various research perspectives and which of those were pertinent to the development of knowledge of interest to ACR members. (See, for example, papers by Hirschman, Holbrook, or Fennell 1986). Additionally a very thorough and thoughtful paper by Brinberg and Hirschman (1986) examines the practitioner versus academician perspectives in research development. In their discussion they outline a conceptual model of the paths by which research is developed and support the need for various research perspectives in the theory development process. However, throughout the more "academically" oriented discussions of research development, two common threads emerge which cannot be dismissed. Good academic research must be either grounded in well developed theory, or be involved directly in theory development, and, must demonstrate keen methodological rigor.

Despite these seemingly valuable characteristics, advertisers argue that current academic thought offers little or no insight regarding actual consumer behavior. Books by two well known advertising executives (Ogilvy 1983; O'Toole 1981), which present their perspectives on the creation of effective advertising, do not mention academic research at all. Additionally, in his description of problems he sees with *agency* researchers, Ogilvy states:

It is in the research departments that you find the eggheads of the agency business. Too many of them are more interested in sociology and economics than advertising. They concentrate their attention on subjects which are only peripherally related to advertising (page 36).

More recently, Bogart (1986) has commented that as academic research has become more methodologically sophisticated, it has concurrently become less relevant to advertising practice. In his words, the problem is the development of research "centering more on measurement than meaning." Because they believe audience preferences, demographics, etc., are constantly and quickly changing, advertising practitioners often argue that the more slowly developed streams of academic research will always be five or six steps behind the problems they must deal with everyday.

As demonstrated by the presence of advertising practitioners in this association, the dismissal of academic thought is *not* universal. However statements such as those given above, and concerns raised by others regarding the interaction of academicians and advertisers (Deckinger 1987) seem to indicate that an academic-to-practice communication gap exists. Additionally, the gap seems to be widening as academic thought and methods become increasingly sophisticated.

Building Bridges between the Perspectives

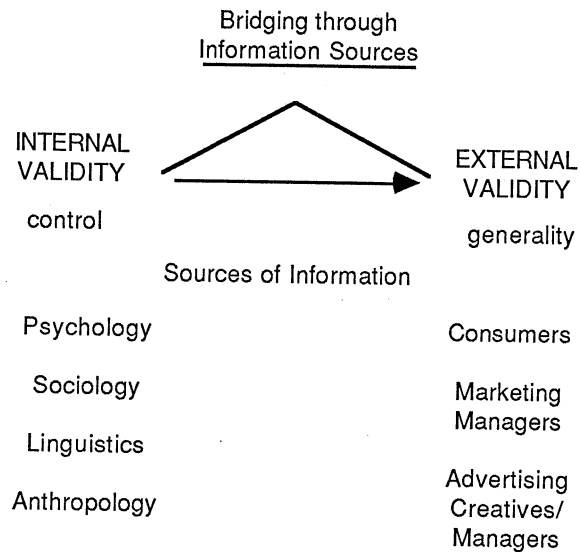
From an academician's perspective, certain goals and constraints exist which cannot be dismissed when developing research interests and programs. As mentioned above, methodological rigor and theoretical bases must be demonstrated for our research to be considered of high quality by our peers. However, these requirements do not preclude the accomplishment of research programs which can offer valuable insights for those involved in the design and implementation of effective advertising campaigns. In the sections which follow, a perspective will be offered which attempts to show how one type of consumer research program has been developed with both academic and practitioner needs in mind and which makes suggestions for other researchers who would like to accomplish the objective of contributing both to building consumer research theory and facilitating advertising practice.

Validity Issues in Research Development

One important goal in the development of academic research programs is the achievement of validity in the design and operationalization of such efforts. Oversimplifying, the two general types of validity with which researchers are concerned are internal validity - the elimination of other factors as causing or obscuring the relationships under study, and external validity - the generalizability of effects seen under study across other situations. Often this dichotomy is described as the trade-off between *control* and *generality* (c.f., Churchill 1983). Often in academic research we concentrate on designing studies which demonstrate high levels of internal validity, for it is those studies which will be deemed more valuable by our peers, in the publication review process. From the advertising practitioner's perspective, the greater control which is demonstrated by the internally valid study is often negatively outweighed by the lack of similarity of the research environment to "real world" situations or problems. What is needed then, is the development of research streams which begin with concern for internal validity but progress by adding equal levels of concern for external validity issues.

Figure 1 displays one factor which is important to the development of such research. The sources of information with which an academician must be familiar go beyond other academic disciplines upon which many of our consumer research efforts are based. These other areas of research do provide theoretical frameworks, methodological tools and past findings which can contribute greatly to the design of internally valid and theoretically grounded consumer behavior studies. However, as one is more concerned with building both internal and external validity, a new set of information sources must be investigated. Those new sources include consumers, marketing or advertising managers, and advertising creatives. Each of these groups can contribute to the building of externally valid research by telling us what questions are important, what is "known" to happen in their situations and, as will be discussed in the next section, what experimental environments and materials must look like if they are to be similar to the natural environment characterizing the phenomenon of interest.

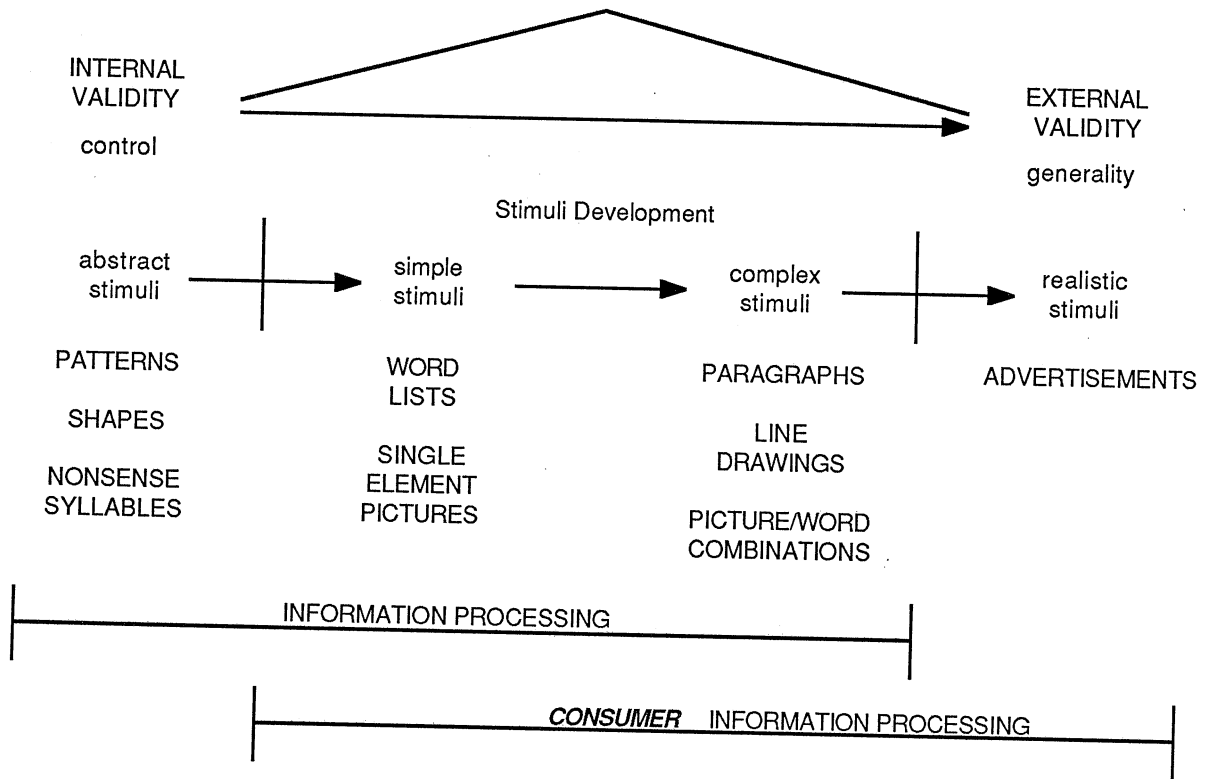
Figure 1



Another factor which affects academic-practice bridge building is the design of materials to be utilized in the research. Figure 2 suggests how the development of stimulus materials might mirror the movement from focusing solely on internal validity to increasing the concern for external validity as well. (See also, Houston and Rothschild 1980.) Using the general research paradigm of information processing as an example, at the stage in which internal validity or control is of paramount importance, one might utilize purely abstract stimuli - nonsense syllables or patterns of dots - in order to eliminate the effects of any previous knowledge in the way in which the experimental subject deals with the study materials. As indicated by the bounded lines at the bottom of the figure, this use of purely abstract stimuli is generally seen as part of the psychological literature in information processing and would probably not be seen in consumer information processing research.

Consumer researchers begin a bit further along the development process, using simple pictures, short paragraphs or even mock advertisements when studying how consumers encode, remember or utilize information. In order to build bridges to advertising practice academic researchers must work harder to develop stimulus materials that fit the constraints of practitioners and the quality demands that consumers place on actual advertisements, while, at the same time maintain the control required to demonstrate internal validity and methodological rigor. It is in the processes of stimulus development and design of experimental environments that the second set of informers can be most helpful. And, while academics can be told to incorporate the knowledge of advertising practitioners, only with open communication from those practitioners through the sharing of research information, sharing of actual advertisements, etc., can such incorporation effectively occur.

Figure 2
Bridging through
Stimulus Development



An Example of Bridge Building Research

One example of a stream of research that has attempted to incorporate the perspective depicted in Figures 1 and 2, and discussed above is the work being done by my colleagues Terry Childers and Michael Houston, and myself. Our work has examined theoretical constructs introduced in the psychological literature, built upon an initial interest in the concept of imagery (Childers 1982). Included in this stream of research have been studies to examine the process by which pictures enhance brand name recall (Childers and Houston 1985), the role of pictures in inducing elaborative processing of picture/word combinations (as depicted in print advertisements) (Childers, Heckler and Houston 1986), and the use of consistent versus discrepant information in pictures versus copy portions of advertisements to induce elaborative processing and enhance memory (Houston, Childers and Heckler forthcoming).

While much effort has gone into maintaining the internal validity of these studies, they have also been designed to move along the continuum of stimulus development, through the use of increasingly realistic stimuli. In the development of the latest study in our research stream, special efforts were made to incorporate ideas from second category of information sources displayed in Figure 1. Specifically, interviews were conducted with advertising copy writers and art directors, to identify what kinds of questions they had that might relate to our research issues, and to insure that the advertisements being developed for the study mirrored as

closely as possible the format and content of actual print advertisements. Their questions, as well as the theoretical issues identified through our past research, led to the development of a study which examines the effects of various types of discrepant information on memory for print advertisements (Heckler 1987).

Conclusion

This paper has attempted to lay out both why knowledge built through academic research has not been effectively disseminated to practitioners and to offer some suggestions regarding improved communications between the two groups. Clearly, other academicians are doing research which attempts to accomplish goals similar to ours. This short description of our research is meant to serve only as one example of such an effort, and to spur those academicians who have research interests in areas related to advertising on to considering how their own efforts might incorporate some bridge building techniques. A gap will likely always exist between the academic and practitioner worlds, because of the difference in their answers to the question "Why do research?" However, through efforts such as those suggested above, and with more open communication from advertising designers, consumer research will not only progress toward a thorough understanding of "how" the consumer's mind works, but also provide practitioners with valuable insights into "what" works best in the competitive environment in which they find themselves.

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The Often Subtle Linguistic Cues in Advertising

Larry Percy, HBM/CREAMER, Inc.

Abstract

In trying to communicate, regardless of the situation, concern is always focused upon "what to say." Beyond this obvious point, however, if one is to be an effective communicator, one must also be concerned with the semantic properties of the message, extending beyond simple verbal meaning. Language can be subtle at times in its effects. Weiner and Mehrabian (1968) have pointed out that the words of communications transmit information that is complementary, supplementary, or redundant to the information transmitted in other components in the communication. As Weiner and Mehrabian go on to point out, careful consideration will show that what appears to be the same thing (i.e. the same content) said with different words, can be a basis for inferring quite different feelings or attributes from the message. This paper explores these points, and applies their implication to advertising.

Introduction

No one doubts the importance of the words chosen in verbal communication in determining just how effective that communication is likely to be. And while attention may be paid to insuring that descriptions or attributes within a target message reflect those things most likely to be meaningful to the target receiver, very little consideration seems to go into possible interactions among those descriptions or attributes, and even less to grammatical consideration. One hopes that there will be a positive, additive relationship among multiple descriptive elements in a communication and that they are well ordered; but that isn't always the case. To the extent that there are incongruities between these verbal elements in a communication, potential dissonance or confusion may result.

Clearly, the components of our language and the way they are assembled will influence how well a message is communicated. Schloss (1981) has remarked that there seems to be something about the English language that causes people to react to certain words or sounds differently than they react to others.

Some Semantic Properties in Processing

It is not unusual to remark in the study of semantics the fact that the same words may have different meanings or that different words may have the same meaning (although when you stop to think about it, no two words are likely to have exactly the same meaning). Of course, we know these words as synonyms and homonyms; and there has certainly been a great deal written about their strong effects in language. For example, when subjects are asked to recall lists of words that contain synonyms, it is not unusual for them to substitute another synonym for that word in playback (cf. Grossman and Eagle, 1970; Kausler and Settle, 1973). With homonyms, the problem is that when receivers hear or see words with diverse or multiple meanings, they are quite likely to be immediately reminded of the several meanings of the word (Conrad, 1974). Associated problems with synonyms and homonyms in advertising have been discussed by Percy (1982).

While it is obvious that different words may have different meanings, as Palmer (1976) points out, their simple meanings are in and of themselves not of much interest. Only when these different meanings are in some way related does one become concerned with their probable impact upon comprehension in communication.

One of the more important considerations in writing copy for advertising should be the extent to which any set of commonly elicited attributes or descriptions are in fact seen as compatible or incompatible in the sense of a synonymic usage. There are, of course, a number of analytic techniques available that help delineate this distinction. Two such methods are discussed below.

Given the potential conflict among product descriptors, and the possibility that underlying semantic incongruity could affect product evaluations, it is important to fully understand just what these semantic relationships might be for any given set of potential product attribute claims. Additionally, it is helpful to assess the cumulative effect of such product attributes, assuming semantic compatibility, upon preference judgements.

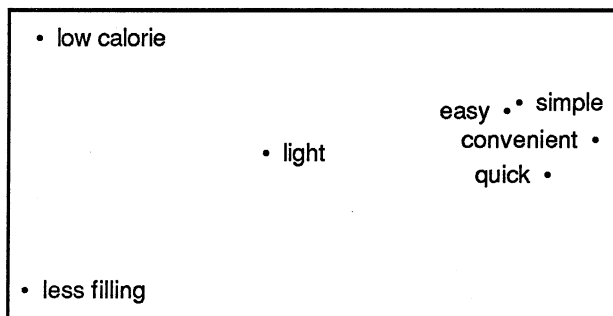
A stimulus set of potential product descriptions for a new light meal product was elicited from a series of exploratory focus groups. Once this set of attributes was determined, a quantification of consumer perceptions of the interchangeability of the attributes in describing various types of meals was gathered, followed by a rank ordering of various combinations of these attributes in describing a new product for people interested in a better way of eating.

The original exploratory focus groups (following Calder's distinction, 1977) provided a set of seven potential product descriptions: convenient, easy, less filling, light, lower calorie, quick, and simple. Within this context, each might be considered part of a group of synonyms. A quantitative study then followed among 150 female heads-of-household aged 18-54. Subjects were recruited via mall-intercepts; 50 interviews in each of Atlanta, Boston, and San Francisco. Data were collected to be analyzed with multidimensional scaling and conjoint measurement techniques.

Multidimensional Scaling - In our first check on the compatibility of the attribute set, subjects were given a set of 21 cards, and listed on each card was one of the 21 pairs of the seven attributes. The card set was presented to subjects as a set of cards where on each card you will find "two words or phrases that people have used to describe various types of meals." They were first asked to separate the cards into two piles: cards with words that could be used almost interchangeably in describing a particular meal and cards containing words that they would not use interchangeably to describe a meal. They continued, ranking the word pairs from the most interchangeable to the least interchangeable. Subjects then considered the set of cards containing words or phrases not seen as interchangeable, and ranked them from the card containing the two words or phrases least likely to be used together in describing a meal. These data were then analyzed using Kruskal's MDSCAL, and the results are shown below as Figure 1.

As the space suggests, subjects are likely to see the attributes "easy" and "simple" as highly interchangeable in describing a meal; and while quick and convenient also tend to be clustered in the same cognitive environment, they are not perceived to be quite so interchangeable. The attributes "lower calorie" and "less filling" are both seen as significantly different from the ease and convenience attributes, yet are not themselves perceived as interchangeable. The word "light" falls in the center of the space, about the same distance from the easy and convenient cluster, less filling, and low calorie.

Figure 1
MDSCAL 5-M CONFIGURATION
OF SEMANTIC ALTERNATIVES
Pairwise Similarity



From a practical standpoint, it is important to know that although subjects feel each of these seven descriptors is appropriate for a new product marketed to those interested in lighter eating, they reflect several possible product configurations. The fact that subjects describe this new product concept in these terms does not mean they are compatible semantic alternatives.

Conjoint Measurement - Given the fact that there are various alternative semantic orientations for this new product, consideration was given to which combination of these attributes are most likely to be seen as best describing the product. Specifically, subjects were given 8 cards with various combinations of the seven attributes based upon a random reduced block orthogonal array. Subjects were asked to look through the set of cards, and thinking about a new product like this, rank order them from the one that they felt best described the new product to the one that they felt would be least descriptive. They were reminded that there were no right or wrong answers, that we were only interested in their opinions.

This rank ordering was analyzed with a CONJOINT measurement algorithm, providing utilities for each semantic alternative. These results are provided in Table 1. What these utilities suggest is that within the context of the seven semantic alternatives generated by subjects in describing the new product, the word "light" is considered by far the best description, unpaired with any other word. The next most favorable words would be "convenient" and/or "easy." While these two words are seen by subjects as compatible, we know from the multidimensional scaling that they are not necessarily additive with the attribute "light." In some cases this may be true, but it does not necessarily follow for all perceptions of this new product. The words "quick" and "simple," while not as good as "convenient" or "easy", are nonetheless semantically congruent and generally

interchangeable as descriptors of this new product. The remaining alternatives are not reasonable considerations.

Table 1
PART-WORTH UTILITY VALUES FOR
SEVEN SEMANTIC ALTERNATIVES

Light	.338
Convenient	.052
Easy	.040
Quick	-.014
Simple	-.026
Less filling	-.425
Lower calorie	-.447

It is interesting to note that given an opportunity to "combine" these attributes in describing the new product, subjects tended to utilize their understanding of the semantic compatibility of the words. There was no mixing at all of attributes perceived not to be interchangeable; yet those felt to be interchangeable ("convenient," "quick," "easy," and "simple") were generally felt to be equally appropriate as descriptors.

In effect, then, we have found that within this product environment the attributes of "convenient," "easy," and "simple" are almost certainly used synonymously; but that in only certain circumstances (i.e. for specific referent products) would the word "light" or the phrase "less filling" or "lower calorie" also be a part of this synonym group.

Image Value of Words and Sentences

The imagery values of words and pictures is strongly related to their ability to enhance effective communication. The foundation of high imagery is measured by the concreteness of words. Concrete words are generally described as those which refer to objects, persons, places, or things that can be seen, heard, felt, smelled, or tasted. They have been found to be better remembered and more meaningful (Yville and Paivio, 1969) as well as better comprehended (Begg and Paivio, 1969; Paivio, 1971; Sheehan, 1970.)

In a study of abstract vs. concrete copy in advertisements, Rossiter and Percy (1980) found concrete copy to stimulate almost twice the favorable attitude toward the advertised brand. While somewhat less research has been done on the imagery value of sentences and other large verbal units, what is available strongly implies that greater imagery yields better communication. Several researchers have found that high-imagery sentences are more easily and correctly understood (Holydak, 1974; Jorgensen and Kintsch, 1973). Overall, one might safely conclude that the use of high-imagery words and constructions in advertising copy, especially in headlines, will enhance successful message processing and communications.

In creating advertising for several beer brands, a set of product descriptors was developed from exploratory qualitative group work. Table 2 below details the key attributes that were developed, along with their concreteness ratings from Toggia and Battig (1978). Their work followed very closely that of Paivio et al. (1968), the only major difference being their usage of "low concrete" as the low end anchor rather than "high abstract," consistent with Spreen and Schultz (1966).

As a result of this work, advertising copy for one brand included the words: "brewed fresh and natural for a

Table 2
CONCRETENESS OF KEY ATTRIBUTES

Attribute	Mean
Taste	1.63
Flavor	2.16
Refreshing	2.38
Fresh	2.50
Clean	2.65
Light	2.66
Smooth	2.86
Brewed	3.17
Quality	3.26
Natural	3.39

Mean values reflect a 7-point scale where lower values represent greater concreteness, where average for all words is 4.4.

smooth taste"; and copy for a second brand included the words: "so clean, refreshing, and light."

Sentence Construction

A number of considerations involving sentence construction that have obvious implications for advertising have been studied. For example, how long should a sentence be for maximum communication? This has clear implications for writing headlines in advertising. Coleman (1962) has found that when technical passages are divided into short sentences, comprehension is significantly better than when the same message is written with longer sentences. Wearing (1973) found that both recall and comprehension improved as the number of words in a sentence increased from five to seven, but fell off significantly for sentences of greater length. In a review of the "read most" scores for 78 corporate ads, a remarkably similar result was noted by Percy (1982): the relationship between read-most and number for words in a headline increased to a maximum in the range of five to eight words, then fell off significantly for headlines containing more words. Perhaps the reason for this may be that longer sentences tend to be both grammatically and psychologically more complex because of the addition of phrases and clauses. In fact, grammarians have identified sentences that contain both an independent and dependent clause (something they call "self-embedded") as the most difficult type of sentence to remember or comprehend (Fodor and Garrett, 1967; Forester and Ryder, 1971). Holding sentences to simple constructions of about seven words in length would seem to be the ideal.

Grammatical Structure in Processing

We also know that active declarative sentences are significantly more easily processed than active questions, which in turn are easier to process than passive sentences; that negative sentences are yet more difficult to process, and so on (c.f. Wason, 1965; Slobin, 1971; Kanouse, 1972). Various verb forms are more or less likely to stimulate deductive vs. inductive reasoning (Kanouse, 1972); the number of words in a sentence (Wearing, 1973), whether they are concrete or abstract (Paivio Yuille, and Madigan, 1968), all influence how well we are likely to process a piece of communication, as we have seen.

Given the critical importances of the grammatical structure of a sentence in mediating cognitive processing, results from work (reported in detail by Percy, 1987) that looked at the communication response to the four sentence stimuli listed below are discussed, illustrating the potential differences occasioned by nothing more than grammatical changes.

- It's not just the calories that count, it's the taste.
- It's the taste that counts, not just the calories.
- It's the taste, not just the calories that count.
- It's not just the calories, it's the taste that count.

Adult male and female subjects were randomly assigned to one of four experimental cells representing the four stimulus sentences and asked for the first thoughts that came into their mind on hearing the sentence. Next, they were asked whether or not they felt the sentence implied that taste or calories was more important in a product that was so described. As the table below indicates, regardless of the sentence heard by the subjects, roughly the same number of words were elicited in response.

Table 3
AVERAGE NUMBER OF WORDS ELICITED

Sentences	\bar{X}	n
1. It's not just the calories that count, it's the taste	2.58	36
2. It's the taste that counts, not just the calories	2.61	31
3. It's the taste, not just the calories that count.	2.73	30
4. It's not just the calories, it's the taste that counts	2.52	27

Each of the words elicited was classified according to Laffal's (1973) concept dictionary. What he provides is a collection of words from the English language that have been organized to reflect the "kinds" of content represented in the words. These concepts, or categories of content, are presumed to reflect cognitive-conceptual sets which are evoked whenever a pertinent word is encountered. By classifying the elicitations for each sentence we are in effect doing a content analysis of the response utilizing the semantic structure of the language used in response stimulated by the sentence. The null hypothesis would surely be that given a common semantic base, the thoughts generated by those words should be similar. But as the correlations in Table 4 reveal, the profile (as measured over 20 measured concepts) of the responses, while certainly not unique, are far from common.

Looking further at these classifications, we find that of the 20 concepts utilized by the subjects in response to these sentences, half were common to all sentences; and in fact the bulk of the words used in each case could be categorized by these 10 concepts. Significantly ($\chi^2 = 9.74; n = 3$), however, sentence four is much less likely to elicit words common to those from the other sentences: 83%, 79%, and 87% of the words elicited for the first three sentences reflected a common underlying cognitive base, but only 68% of those elicited by the fourth sentence.

Table 4
PEARSON CORRELATION MATRIX OF LAFFAL
CONCEPT PROFILES

1. It's not just the calories that count, it's the taste	1.000			
2. It's the taste that counts, not just the calories	0.740	1.000		
3. It's the taste, not just the calories, that count	0.859	0.753	1.000	
4. It's not just the calories, it's the taste that counts	0.773	0.602	0.710	1.000

Another way of looking at the words elicited by these sentences is their concrete and imaging value. If differences were to occur here, we would have more than the meaning differences implied by the Laffal concepts to deal with; we would have potential learning differences as well. As we have seen, in terms of concreteness, it has been well established that more concrete words are better remembered, tend to be more meaningful, and as a result better comprehended (Yuille and Paivio, 1969). Would it not be reasonable to assume that if a stimulus elicited more concrete thoughts it too would enjoy some of these same attributes? In any event, the resulting cognitive response, which reflects its interpretation in memory, certainly does.

Beyond this question of memory and learning, Paivio (1971) has pointed out that both recognition and recall occur more accurately and faster for concrete words. Additionally, a number of other studies have shown that concrete words are more positively associated with comprehension (Begg and Pavio, 1969; Paivio, 1971; Sheehan, 1970). Given this, one should expect better sentence comprehension to follow from more concrete responses. Finally, Rossiter and Percy (1978) found that representation of advertising claims for a hypothetical new beer when concrete generated almost twice the favorable attitude for the product as more abstract ones.

Each of the cognitive elicitations for the four stimulus sentences were checked for concreteness as reported by Toglia and Battig (1978). Approximately 80% of the thoughts elicited by the stimulus sentences were classifiable by the Toglia and Battig word norms. And as the data in Table 5 reveal, there was no significant difference in the types of responses that were not able to be classified.

Table 5
ELICITATIONS NOT CLASSIFIED BY TOGLIA AND
BATTIG WORD NORMS

Word Type	Sentence			
	1	2	3	4
Nouns	7	7	8	10
Pronouns	4	4	3	1
Adjectives	3	2	4	2
Verbs	4	2	3	2
Adverbs	1	1	0	0
% not classified	20%	20%	22%	22%

$\chi^2 = 6.37, n = 12$

Looking at the "concreteness" ratings for all of the responses classified, the 56% above the Toglia and

Battig mean of 4.4 for sentence three (versus 44%, 40%, and 45% for the other sentences) suggests that the stimulus sentence three "It's the taste, not just the calories, that count" tended to elicit more highly concrete thoughts. While only marginally significant (at about the 86% confidence level), it is interesting that sentence three is the only clearly center-embedded sentence. Table 6 below details the percentage of words classified above the mean for the concreteness of elicited thoughts.

Closely related to the concept of concreteness is that of imagery value in words (Paivio, 1971). As a result, even though it is not strictly impossible for more abstract words to evoke visual images, unless learned specifically, it is much less likely (Rossiter and Percy, 1983). For example, although words like "fantasy" or "dream" are highly abstract, they may exhibit high imagery value.

Unlike concreteness, research on the imagery value of large verbal units such as sentences is sparse. Among the few studies available to us, however, there is a strong suggestion that imagery value enhances communication. Jorgensen and Kintsch (1973) have shown that sentences with higher imagery value tend to be evaluated significantly faster as true or false; and Hoylocek (1974) has found them significantly easier to understand than sentences rated low in image value. And as Percy (1982) has suggested, following the work of Williams (1979), who found that high imagery syllogisms were faster and more accurately solved than the same syllogism made up of low imagery words, advertising claims which more easily arouse visual imagery of items and relationships should be more easily comprehended. Hence, the sentence stimuli eliciting higher imagery thoughts should be more easily comprehended.

Looking at the imagery word norms for all of the responses classified, the 62% above the Toglia and Battig mean of 4.55 for sentence three (versus 40%, 37%, and 45% for the other three sentences) again suggests that stimulus sentence three tends to elicit more high imagery thoughts. Here, the difference tends to be much more significant (the 94% confidence level). The parallel between the concreteness and imagery ratings is consistent with our expectations from the literature.

Table 6
HIGH CONCRETE AND HIGH
IMAGERY ELICITATIONS

Sentence	High	High
	Concrete(a)	Imagery(b)
1. It's not just the calories that count, it's the taste	44	40
2. It's the taste that counts, not just the calories	40	37
3. It's the taste, not just the calories, that count	56	62
4. It's not just the calories, it's the taste that counts	45	45

[a] $\chi^2 = 5.66$; significant at the .14 probability

[b] $\chi^2 = 15.06$; significant at the .06 probability

After the subjects were asked for the first thoughts that were stimulated by the sentences, they were asked whether taste or calories was most important to the product described. The correct inference in each case, of course, was taste; and indeed, the majority of subjects did

in fact say taste. However, among the minority saying calories, there was a significant difference between sentence stimuli. As the data in Table 7 indicates, those exposed to sentence two, "It's the taste that counts, not just the calories," were significantly more likely to incorrectly infer that calories was the most important consideration in the product.

Table 7
INFERENCE DERIVED FROM
STIMULUS SENTENCES - 1

Sentence	Incorrect Calorie Inference	Correct Taste Inference
1. It's not just the calories that count, it's the taste	11	89
2. It's the taste that counts, not just the calories	23	77
3. It's the taste, not just the calories, that count	13	87
4. It's not just the calories, it's the taste that counts	15	85

$\chi^2 = 6.34$; significant at the .10 probability

One explanation of this result might be found in the recency literature, which suggests that words that have been heard (or read) more recently are retrieved more rapidly than words which occurred longer ago. And this coupled with the increasing difficulty of correctly dealing with the negative, right branching clause ("not just the calories") in processing, could be causing subjects to be more likely to misattribute calories rather than taste as the dominant product attribute in this grammatical construction.

Also, even though it might be argued that "taste" should be expected to have been more likely to have been correctly processed and remembered simply because it is a more frequently used word than "calories" in the English language (used over 100 times per million vs. about 4 times per million for calories according to Thorndike and Lorge, 1944), this issue of word frequency has been shown in a study by Scarborough, Cartese, and Scarborough (1972) to be confounded by recency effects.

Summary

The specific results reported here from several studies, while not always highly significant, nevertheless indicate that linguistic elements and grammatical structure do indeed function as mediating variables in message processing. Specifically, we have seen where grammatical variations of an advertiser's claim meant to communicate that taste is the critical attribute of their product, not merely lower calories, can significantly influence the likelihood that the message will be correctly communicated. Additionally, we have looked at the compatibility of words in terms of perceived congruence and discussed several applications of psycholinguistic principles to advertising. The point is, these often subtle cues in language can have significant impact upon how advertising will be processed. This clearly argues strongly for testing advertising to be sure one knows just what is likely to happen in the market because of the way the copy has been written.

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Market Pioneering, Learning, and Preference

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Abstract

A number of recent studies suggest that product knowledge and experience affect the organization of a consumer's product perceptions, and consequently, his or her preferences. In this paper, we consider the order of these experiences and the biases that this order may induce in consumer decision processes. We then examine these decision making biases as a potential explanation for the persistent market share advantages that often accrue to successful early market entrants. This paper extends earlier work in this area (e.g., Carpenter and Nakamoto 1987) by more fully developing the behavioral foundation for this type of advantage. We suggest that, in many cases, early entrants frame the consumer's perceptions of the product category, thereby defining the rules of competition. As a result, these brands can distort brand preferences in their favor. Because these advantages are independent of production efficiency or outstanding marketing expertise, they have profound implications for the nature of competition in the market.

Introduction

Memory for product information or past usage experience has been shown in a number of recent studies to have a profound impact on consumer decision behavior. For example, knowledgeable consumers appear to rely more heavily on brands as foci for organizing product information, and on categories and subcategories as bases for grouping brands (Bettman 1986; Johnson and Russo 1984; Sujan 1985). In addition, choice experience results in selective retention of brand information favoring chosen brands (Biehal and Chakravarti 1982). This selective retention continues to favor previously chosen brands even if a previously inferior brand is improved through addition of a new attribute (Biehal and Chakravarti 1983). Thus, choice affects memory, and memory, in turn, affects choice processes.

Because of this ongoing interaction of experience and preference, the *order* of a consumer's product experiences can affect his or her choice behavior over time. Changing the order of experiences, even if they are the same in aggregate, might well change product perceptions and subsequent choices.

In this paper, we consider the potential impact of the order of a consumer's initial experiences with a product class from the perspective of category learning. We limit ourselves to the consideration of learning situations where the consumer initially has poorly formed expectations regarding the product category. In addition, we focus on products or services where relative performance is either difficult to assess (e.g., vitamins) or dependent on personal taste (e.g., soft drinks). Of particular interest to us is the situation where consumers learn about a product class through experience with one brand — a market pioneer.

These brands appear to command significant competitive advantages that often persist for decades. These advantages translate into higher market shares for pioneering brands (Robinson and Fornell 1985; Urban et

al. 1986). Moreover, contrary to economic theories for this phenomenon, these advantages arise in the absence of any cost or awareness advantages for the pioneering brand. Carpenter and Nakamoto (1987) develop a consumer-based explanation for these advantages and demonstrate that the process of buyer preference formation can result in a significant pioneer advantage, even in the case where cost and awareness are equalized.

In the present paper, we consider more fully the behavioral mechanism driving these findings, and extend the theory to explain the persistence of market share advantages accruing to a dominant brand in a category, however that dominance was achieved. In essence, we suggest that the consumer's initial experiences with a product class will frame the consumer's perceptions of all the brands in the product category. More specifically, we propose three ways in which the order of the consumer's product experience can affect consumer perceptions of brands in the category and preferences for the brands. The initial experiences will define the relationship of the product category to related ones. They will define the product attributes that are relevant to decision making (Johnson and Russo 1984). Finally, they will define the attribute configuration that is prototypical of the category. Because of the task environment in which the category structure is developed, we suggest that prototypicality will be closely related to preference.

Product Experience and Category Learning

In most studies of perceptual category learning, several examples of the category are presented simultaneously or in close succession. The distinguishing features of the category are immediately available and the subject can induce category structure through direct observation (Holland, Holyoak, Nisbett, and Thagard 1986).

Learning about products presents a very different problem for the consumer. Typically, product exposure is sequential with an appreciable period between exposures. It is rare that a broad spectrum of brand information is presented at one time. Thus, category structure must be induced from information in memory. In addition, a consumer's early exposure to a product is often limited to one brand, or a small set of brands, so that the information used to derive category perceptions is biased.

As a result, inferences regarding category membership based on these category perceptions will be affected. In a recent study, Elio and Anderson (1984) investigated the impact of order of presentation of category examples on people's ability to distinguish between members of two related categories. The examples were described in terms of a set of attributes, and categorization was based on a fairly complex rule that was not revealed to the subjects. Rather, subjects learned about the categories by examining sequentially a set of examples of each. For some subjects, highly typical members of each category were presented first, and the full range of attribute variation in each category was introduced later. Others were exposed immediately to the full range of variation. Subjects then classified a

novel set of examples into the two categories. They were best able to do this when they had learned about the category by seeing highly typical members first. Elio and Anderson argue that the consistency in the narrower grouping promotes formation of strong category generalizations.

This result suggests that learning about a product category on the basis of a limited set of similar brands leads to strong perceptions of the nature of the category, including product features critical to the definition of the category, and features that would tend to place an item outside the category. Barsalou (1982) refers to these critical features as context-independent. Other attributes are context-dependent and are made salient by a particular task. These attributes might characterize variation among brands within a product category.

Category Learning and Brand Preference

The consumer's view of variation within a product category, like the category definition, would be expected to depend on early product experiences. In other words, early experience would set up an implicit context for product judgments.

Context has been shown to influence judgment in a variety of settings. For example, Tversky (1977) showed that the composition of a set of items affects perceptions of differences between items. Huber, Payne, and Puto (1982) extend these set composition effects to preference judgments, showing that changing one brand in a choice set can change the relative preference of one unaffected brand over another. Their explanation of the effect suggests that the change can make one brand more central to the category by changing perceptions of brand differences.

Barsalou (1985) presents an extended notion of typicality that lends credence to this linkage between perceptions of brands as members of a category and brand preference. For natural descriptive categories (e.g., the category of birds or of shapes), the "goodness" of an item as a member of a category appears to be related to its proximity to the "center" of the category. Thus, as the value of one of its attributes approaches a central value (e.g., the median or mode) of that attribute amongst all members of the category, the item's typicality increases.

Barsalou contrasts this case with that of goal-derived categories, such as "foods to eat on a diet" or "things to give as birthday presents." Barsalou found that measures of central tendency are poor predictors of typicality in these categories. Indeed, a goal-derived category often has little natural organization so that central tendency has little meaning. In addition, one is often interested in items that have extreme values of key attributes (e.g., diet foods have few rather than an average number of calories).

Consistent with these differences, Barsalou found that two good predictors of the goodness of an item as a member of a goal-derived category were 1) the relative proximity of an item's features to category ideals, and 2) the frequency with which an item had been experienced as a member of the category. In the absence of any natural structure, one must rely on one's own experiences to guide categorization judgments.

A product class might be viewed as a goal-derived category, the goal being the satisfaction of some need. The preceding analysis then suggests that the proximity of a brand's attributes to category ideals and the level of a consumer's experience with a brand should predict the

"goodness" of a brand as a category member. However, this category judgment is tantamount to one of relative preference for brands in a given usage situation. Thus, brand preference and category structure are closely linked.

Once again, the genesis of category structure lies in the consumer's initial product experiences. Because exposure is often limited to a small set of brands, the frequency with which they are encountered as category members will be relatively high. In addition, when consumer perceptions of product quality are poorly formed, category ideals may be defined through product use.

Deighton (1984) and Hoch and Ha (1986) provide data suggestive of such a process. In their studies, advertising messages were conceptualized as hypotheses, which were tested by consumers through product use. The advertising served to interpret consumer experience with the product, which in turn validated the hypotheses. Deighton found that quality perceptions for automobiles were enhanced far more by advertising messages and objective data than by either type of information alone. Advertising alone was evidently untrustworthy; evidence alone was too difficult to interpret. By offering an interpretation of the evidence, the advertising had a major influence on brand evaluation. Hoch and Ha used direct inspection of the product as evidence, and also manipulated the timing of advertising presentation. Advertising had an effect only when presented before the experience, and had an effect only when there was ambiguity associated with the experience.

These studies considered categories for which global perceptions were already defined. What, then, of a category novel to the consumer?

When Vaseline petroleum jelly was introduced, it stressed the importance of purity. Satisfactory use of the product as a dressing for wounds might be perceived as vindication of that claim, making purity an important ideal of the product category. Thus, we suggest that initial product learning will generalize to the category, giving rise to preference-related product expectations.

Because of these expectations, product classes typically develop a "natural" structure or stereotype as well as a purely goal-oriented functional organization. Certain product features, both physical and functional, come to be associated with the category. For example, a vast array of features might distinguish soft drinks. However, common to most people's vision of a soft drink would be features like carbonated, sweet, flavored, and to be drunk cold. Indeed, a firm violating these expectations might have difficulty persuading consumers to categorize its product in this class.

Thus, it seems likely that product categories include a great deal of redundant information. While a variety of physical products might serve a given function, only certain ones will be viewed as legitimate. A mylar weather balloon might make an excellent insulator for a quilt, but fits the image of a quilt rather poorly. Thus, not only function but physical form restricts the types of allowed variation within the category.

Moreover, once this category stereotype is formed, research in social cognition suggests that it is extremely resistant to change (Fiske and Taylor 1984). When encountering product information incongruent with the stereotype, effort appears to focus on finding an interpretation of the data that reduces the incongruity. Later recall appears to be dominated by information congruent with the stereotype. As a result, the category

learning process suggests that a consumer will develop a persistent image of the product category built around early product experiences.

In sum, the dynamics of category learning suggest that category ideals as well as defining features of the category are inferred through early product experiences. Therefore, the brands first experienced by the consumer will be perceived as highly representative of the category. And, because of the goal-derived nature of a product category, this representativeness will be closely linked to brand preference. Finally, because of the persistence of these category and brand perceptions, preferences will be long-lived.

Category Learning and the Dynamics of Competition

From a competitive standpoint, two extreme situations can be considered as archetypal sources of biased consumer learning. First, consider a market composed of a static set of brands with consumers entering and leaving, and assume one of the brands is dominant (i.e., has a large market share). In this case, an entering consumer's initial product experiences are likely to include the dominant brand. As a result, the consumer's category perceptions will reflect the characteristics of that brand.

Alternatively, consider an emerging market, into which a small set of brands enters. By default, consumer experience would be limited to those brands. For consumers who use the product, category perceptions will be based on the characteristics of that small set of brands. Thus, category structure and the rules of competition will reflect these brands. This inductive learning process makes later entrants, to the extent they differ from the pioneer, not only different but deviant and less preferred.

In either of these cases, we would expect to see consumer preferences biased in favor of the brands on which category perceptions are based. Thus, in the first case, we would expect consumer learning processes to help perpetuate the leading brand's market dominance. In the second case, decision processes would favor the early market entrants.

It is important to note, however, the limits of these effects. First, learning takes place at an individual level, so that if an early entrant is to realize its advantages, it must achieve a high penetration in the market so that the product stereotype is firmly implanted for a sizable proportion of consumers. Second, the advantage will have a limited life unless the linkage between specific product attributes and product performance is difficult to observe. Urban et al. (1986) have shown that product positioning can have an impact on the fortunes of later entrants, so that if a position can be shown to be objectively superior, the effects of entry order can be overcome.

To this point, we have considered a fairly general consumer-based explanation for the persistence of market dominance, however it was originally achieved. In the remainder of this paper, we will focus on a special case of the the second scenario — that of a pioneering brand, where early consumer experiences are limited to a single brand.

Pioneers, Copycats, and Asymmetries in Preference Formation

In many markets, one brand achieves dominance early in the development of the product class. Seemingly immune to the vagaries of the marketplace, this brand then consistently outsells all competitors, an advantage that sometimes lasts for decades. This market share advantage has been dubbed a pioneer advantage.

Traditional explanations for this phenomenon focus on some particular expertise of the firm. Some cite lower unit costs due to production experience or economies of scale. However, Robinson and Fornell (1985) found that the costs of pioneers are not lower than those of later entrants. Others cite superior foresight in positioning (Prescott and Visscher 1977) that allows the pioneer to preempt later entrants. However, pioneer advantages have often survived significant changes in consumer tastes, as well as repositioning by numerous brands.

The consumer learning process described earlier provides a natural explanation for long-lived pioneer advantage, particularly with respect to later entrants adopting a *distinctive* position in the market. If the product is too different, it would fall outside of the category. Inside the category, the later entrant faces the entrenched consumer category perceptions and preferences.

An alternative entry strategy for a later entrant would be to mimic the pioneer insofar as possible. These copycat or me-too brands are rarely successful in overtaking the pioneer. In this case, we must consider two cases — quality that is observed vs. quality that is inferred. Schmalensee (1982) provides a formal analysis of the case of observable quality. The case of inferred quality represents a special case of biased category learning.

Learning Through Informative Trial

Schmalensee considers the case of a commodity whose quality is observable through a single trial or use. A brand either works or fails, and its performance is assumed to be unchanging over trials. Quality may vary across brands, which means that before use, there is some risk of failure associated with a brand. No other form of product differentiation is allowed.

In this situation, the pioneer has a significant advantage. Consumers who have tried the pioneer know it works. However, this is not the case for later entrants that have not been tried. Because of the risk of failure, the expected value of the later entrants is lowered. This forces the later entrants to charge a lower price in order to induce trial (and brand switching). As a result, the pioneer can charge a higher price than its competitors. If the later brand is successful, the pioneer advantage disappears. Thus, the life of the pioneer advantage in terms of market share can be limited (although this is not so for lifetime profits).

Empirically, however, one can cite numerous cases in which a pioneer advantage in terms of market share has persisted for decades, long after later entrants become well-known. Prime examples are Coca-Cola, Levi's jeans, Dial soap, and Maxwell House coffee. In all of these categories, most consumers are aware of competing brands, and many, if not the majority, have used them. Moreover, in all of these categories, some competitors are functionally indistinguishable from the pioneering brand. The risk of failure associated with later entering

brands, therefore, is small. Yet, their market shares do not approach those of the category pioneers.

Learning By Interpreting Experience

Once again, as Carpenter and Nakamoto (1987) suggest, a potential explanation for this phenomenon lies in the pioneering brand's role in the category. In the examples just cited, the link between product attributes and quality would be initially poorly defined and difficult to observe. In this situation, we have argued that early entrants will define the relationship of the new category to previously established ones, specifying critical attributes of the category. In addition, they will frame competition among brands within the category by influencing relative brand perceptions, becoming highly representative of the category. In the case of the pioneering brand, the pioneer is *uniquely* representative or prototypical.

In terms of the previous analysis, the pioneer is close to the category ideals because the ideals are derived from experience with the pioneer. In addition, by default, the most frequently experienced brand would be the pioneer. As such, it provides a cognitive referent, and in extreme cases, pioneering brands become synonymous with the product category as in the cases of Levi's, Kleenex, and Jello.

Rosch (1977) notes that this prototypicality has a variety of effects, including faster identification of the object as a member of the category, and faster and more reliable recall of the object as a member of a category. In other words, the pioneer would be expected to enjoy a distinctiveness among brands in the category that would distinguish it from copycats. In a sense, simply because it has a different brand name, the copycat lacks this distinctiveness, is therefore less typical of the category, and less preferred. Consistent with this suggestion, Carpenter and Nakamoto (1987) found that the pioneer's advantage with respect to a copycat brand increased as the perceived similarity of the pioneer and the copycat increased. In addition, distinctively different second entrants fared better than copycats. In this study, the position adopted by the pioneer was manipulated, but the same pattern of results emerged regardless of the pioneer's location.

From a competitive standpoint, this result demonstrates that consumer preferences can be affected simply by entry order. As a result, it appears that pioneers, rather than selecting the most desirable position in the market, create that position. They define theirs as the superior product. The essence of the pioneer's advantage, then, lies in its effects on the framing of the consumer's perceptions of a product category and on the implicit context in which brand comparisons take place. The resulting perceptual and preference structures favor the pioneer, giving rise to its competitive advantage.

Implications

Our analysis of the bases for pioneer advantage has two central implications. First, consideration of the prerequisites for and limits of a pioneer advantage are suggestive of a theory of second entry. In a product category susceptible to framing by the pioneer, the problem for the second entrant will be to increase its own relative typicality and prominence. One approach would be to develop a distinctive product position, encouraging the consumer to form two subcategories, or in an aggregate sense, segmenting the market.

Consistent with this, Carpenter and Nakamoto (1987) found that the more similar a group of later entrant brands taking a distinctive position were perceived, the weaker the pioneer advantage.

On the other hand, if the category is one in which product use will allow judgments of relative product superiority (e.g., the observably superior performance of Sony's TV sets), then direct competition with the leading brand may be feasible. Alternatively, if the pioneer has failed to obtain high market penetration by the time the second brand enters, the later entrant may usurp the pioneer advantage with a large marketing budget. This is a strategy employed by IBM with great success.

A second and more general issue raised by our analysis is an important dimension of marketing strategy beyond that embodied in the marketing concept, in which successful marketing strategies respond to consumer demands. In our view, consumer preferences are often malleable when product experience is very limited. As such, framing consumer perceptions and preferences may be an important objective of marketing strategy. The great sums of money devoted to advertising soft drinks to young teenagers and giving computers to schools may well prove effective in achieving a lasting competitive advantage for this reason.

Conclusion

We have argued that the learning environment faced by consumers often biases the order of product experience, and leads to biased perceptions of a product category and the brands in the category. As a result, brands that can attract early use by the consumer stand to gain a significant and long-lasting advantage, because those experiences will play an important role in the formation of preferences for *all* brands. In the special case of a market pioneer, early success produces a situation where the pioneer occupies a position that is difficult to imitate and where it becomes costly to attract consumers to a distinctive brand. Such a process has far-reaching implications for brand strategy and the analysis of market competition.

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The Application of Prototypes and Categorization Theory in Marketing: Some Problems and Alternative Perspectives

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Concepts such as "prototypes" and "typicality", adopted from the psychological literature on categorization, have been applied in a number of different areas in marketing in recent years. The investigations that have used these concepts range from studies in consumer behavior (e.g., knowledge representation, choice set formation, information processing in salesperson encounters) to those concerned with more strategic issues (e.g., relationship between hierarchical market structures and categorical structures, order-of-entry effects in new product introduction). Of present interest is the fact that such a categorization perspective has proven to be useful in providing a psychological explanation for empirically observed "order of entry" effects on sales of competing brands in product-markets (Carpenter and Nakamoto 1987; Marlino and Sujan 1987). Here the argument is made that the first entrant in a category "establishes the category" and as a consequence is most likely to become the prototypical brand or exemplar for that category. The first brand to enter a market and establish a category might enjoy higher acceptance (sales) than others (Robinson and Fornell 1985; Urban, et al. 1986) and thus gain for itself a "pioneering advantage". The recent experience of Coca Cola in rescinding its decision to drop original Coke in the face of substantial customer outcry can, for example, be "explained" in these terms. As the first carbonated soft drink, it could be said to have established the category and become the prototype for a significant number of customers. The concept of an improved new product could not be accepted by those customers, since Coke was the standard. (Since different customers enter the product-market at different times, they may form similar categories with different brands, e.g., Pepsi, as prototypes. Such a process would still permit the first to enter to possess the largest market share, yet not necessarily force such a result.)

Marlino and Sujan (1987) have elaborated on the above perspective by suggesting that individuals form expectations of the product category as a whole based on the pioneering exemplar and reference such expectations when making evaluations of subsequent product category entrants. This is consistent with the psychological research tradition dating back to Bartlett (1932) which holds that the role of past experience is to provide abstract cognitive tools (e.g., schemata) that help an individual to cope with new experiences. But in addition to its explanatory contribution to a psychological theory of consumer behavior, research that is capable of revealing such categorizational (and expectational) structure may have substantive normative value if it can lead to coherent product-market definitions.

The purpose of this paper is to note certain important problems and possible caveats which need to be better understood, and addressed through future research, if the above contribution to managerially relevant phenomena such as market structure, order of entry effects, etc. is to be realized from paradigms based on categorization theory. While the resolution of some of these problems may lie in terms of defining boundary line conditions within which generalizations can be made

from particular investigations, this may be an opportune time to selectively review the problems, particularly those which are of broader relevance.

Category Formation and Identification: An important issue that needs to be addressed is the process by which pre-existing cognitive categorical structures are modified to accommodate new categories. From a research standpoint, this issue is germane to an identification problem: How does one draw the boundaries around a new category, and can one offer a defensible definition for distinguishing this category from other collections or groupings of objects? New category formation does not appear to be an automatic process in response to an encounter with something new, or even a process that is easy for the marketer to initiate. The marketing of a technologically "new to the world" product may serve to stimulate consumer interest or awareness, but this need not imply a new category will necessarily form around it. Consumers may at first try to fit the new object into their existing categorical knowledge structures, and to ascribe meaning to the new thing in terms of what they already know. Quite independent of technological or producer-side evaluations of the "degree of newness", the new product may be assimilated to cognitive structures with minimal effects on the latter, or it may be simply ignored. The following example from Rogers and Shoemaker (1971) serves to illustrate this point.

A change agent sent by the public health service department attempted, over a two-year period, to persuade the families in a peasant village in Peru to adopt an innovation. The innovation involved boiling water on a regular basis before consumption, to minimize the risk of water-borne disease from water sources that were known to be contaminated. Ultimately the persuasion campaign failed with barely 5% of the families adopting the innovation. Rogers and Shoemaker (1971, p. 5) attribute this failure chiefly to the manner in which the traditional (cultural) beliefs of the local population related to the innovation. Boiling water was categorized into a more general category of "making cold foods hot"; the peasants were highly familiar with the latter activity, but - unfortunately for the change agent - only in the context of something a person did if he was sick or chronically invalid. The novelty of the innovation was lost in the process of assimilation to existing belief or knowledge structures.

If one accepts the argument that what really matters is the *meaning* conferred upon the new product by potential adopters (Bartlett's, 1932, "effort after meaning"; Piaget's "assimilation"), rather than producer-side perceptions of newness, then changes in pre-existing categorical structures have to be viewed as a gradual, adaptive process. From a research standpoint, this clearly complicates the problem of identification. It can be argued that nothing is "really" new. Coca Cola may have been first perceived by consumers merely as carbonated water with a different taste; the automobile as a horse-less carriage; television as a movie within the home or as radio with pictures. Sociologists talk of continuous and discontinuous innovations is an attempt

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to acknowledge this fact. But even from a producer standpoint, it may be difficult to identify the discontinuities. Crawford (1983) has discussed this issue in the context of the Jewkes, Sawers and Stillerman (1959) study, *The Sources of Invention*. Crawford points out that the lack of sharp breaks or discontinuities led the above authors to be highly situational in their identification of inventions and inventors.

The above identification problem is compounded if one makes a distinction between technological invention and successful innovation (Crawford, 1983). The latter involves the additional effects of new product management. The ability of the firm to promote and market its innovation will also affect the likelihood that the new product comes to serve as exemplar of some new category. A product called Lestoil was the first liquid cleanser to be marketed, but it is no longer available. Mr. Clean, Handy Andy, and Ajax are later brands that have survived in this category. Presumably, one important reason for this lies in the inferior marketing capability or inadequacy of the resources devoted to marketing the first entrant. Primacy can only be important if the first to enter effectively markets its advantage and does whatever things lead to new category formation. The *rate* at which eventual customers encounter the products in a category should possibly also have an effect on which becomes the more accepted exemplar. If competition enters a market very quickly or enters and promotes its products at a time when rapid growth is capable of occurring, then a later entrant could well become the exemplar to the largest number of customers. The presence of these confounds suggests that historical data on new product successes need to be interpreted with caution when such success is interpreted in terms of first entrants becoming prototypes of new categories¹.

Importantly, the entry of directly competing, similar objects (e.g., additional brands) may accentuate differences perceived between new and existing products and imply that this *collection* of "new objects" requires distinct categorization. If imitative competition should fail to develop, perhaps the existing categorization structure would be more likely to remain unchanged². Such cues may serve to enrich categorical structure as individuals learn to discriminate and, through that process, pay attention to different properties or features of the new objects. Seven-up may have helped distinguish itself (and lemon-lime beverages generally) from other carbonated beverages by promoting itself as the "uncola" and later emphasizing that it never had caffeine. The appearance of numerous products based upon digital technology and the existence of high resolution computer monitors likely help in establishing digital televisions as different from conventional receivers and thus may help to justify their higher prices for some customers. While empirical research in a consumer setting is needed to establish the validity of

the above speculations, a theoretical foundation for such research is available in the psychological literature through the work of Gibson (1969) on perceptual learning, and those of Garner (1974) and Tversky (1977) on the "diagnosticity" provided by the "context of alternatives". *Objectivist vs. Relational Approaches to Categorical Structure*: Two closely related constructs, similarity and typicality, underlie most contemporary psychological accounts of categorical structure (Smith and Medin, 1981). These constructs are "explained" in various structural models by *decomposition* of objects into elements ("primitives") referred to as features, attributes, properties, etc., with such terms used almost interchangeably. For example, Tversky's (1977) well-known set-theoretic treatment of similarity represents this construct as a linear combination, or contrast, of measures of the common and distinctive features of a pair of objects. Rosch and Mervis (1975) relate typicality to "family resemblance", which is a measure of the extent to which an object shares attributes with all other category members.

But as Rosch and Mervis (1981) acknowledge, there has been much controversy over the *level of abstraction* at which a particular kind of attribute decomposition can or cannot be said to occur. Attributes that are considered as "primitives" are usually believed so through default rather than by any explicit logic. In most empirical investigations subjects have routinely been given attribute listing tasks (e.g., Rosch and Mervis, 1975) and it has been assumed that subjects somehow "automatically" find the "right" level of analysis. A major criticism of "objectivist" decompositional approaches (e.g., see Murphy and Medin, 1985), it was originally referred to as the *problem of presupposition of attributes* by Cassirer (1953). Consider for instance the several different levels of aggregation at which one might choose to define "feature" in an automobile exhaust system. The level of analysis is likely to depend on situational goals (e.g., a car emission inspection is imminent), and also on one's expertise in perceiving how various components are meaningfully related into organized "wholes" (e.g., the differences in perspective between the car owner and the skilled repair mechanic).

A closely related problem to the above is that the standard (objectivist) account of categories looks upon attributes as *properties of objects in themselves*, rather than as *properties that get defined in a relational sense* out of the purposeful interactions that people have with their world. (For elaboration of this criticism see Nelson, 1974; Bransford and McCarrell, 1974; Miller and Johnson-Laird, 1976; Lakoff and Johnson, 1980). Interactional properties, such as the "graspability" of a tennis racket, cannot be defined independent of characteristics (e.g., physiological) of people. Attempts at accommodating such "functional features" into the objectivist view (e.g., Smith and Medin, 1981, p. 26-27) ignore, at the very least, the problem created by *variability in the relevant subject level characteristics*.

The problem of using objects in isolation as the unit of analysis is acknowledged by Rosch (1978). Rosch points out that in order to find a unit of analysis relevant to the real world, attention has to be turned to the contexts in which objects occur: "To the culturally defined events in which objects serve as props," (1978, p. 42). In the same vein, Murphy and Medin (1985) have pointed out the inadequacies of using similarity as the basic construct for categorical structure, and state that

¹Caution in such interpretation is also indicated from a theoretical standpoint, given that classic studies on visual patterns such as Posner and Keele (1968) and Franks and Bransford (1971) did *not* find serial position effects in prototype abstraction.

²This provides an illustration of a case where a firm may welcome direct competition because its presence makes it easier to distinguish the entire product class and by so doing achieve differential growth.

"Human interests, needs, goals, and theories are ignored" (p. 295) in current theories.

In contrast to the objectivist accounts, Nelson (1974, 1985) has drawn on the work of Piaget and Cassirer to propose a relational theory wherein the formation or acquisition of the category concept involves attempts by the individual to comprehend instances of the category within an overriding function or relational rule rather than through the specification of attributes. Nelson (1974) suggests an all-important distinction between what the category concept *means*, and how instances of the category can be *identified*. Nelson points out that the psychological literature has not generally distinguished between the two, with the result that *identifying attributes* have often been taken to be the basis for categorical concepts (for example, in decompositional structural models). But from a process perspective, analysis of the whole (object) into its parts (attributes) may be unnecessary to a meaningful category concept. On the contrary, the object may first be comprehended in terms of important *functional relationships*: What Cassirer (1953) terms "logical acts". Perceptual analysis which leads to attribute decomposition may be a secondary process, and not *a priori* essential to the existence of a meaningful category concept.

The above distinction between what a category concept means, and how instances of the category can be identified, is likely to be less important in the case of simple perceptual stimuli such as geometric figures, colors, etc. But the distinction becomes highly important when the phenomena of interest are objects of pragmatic use (or as William James would put it, "sensible objects"). For example, interobject similarity may be based on many different dimensions (Nelson, 1974), of which the static, perceptual dimension of shape or form, which is the dominant dimension in identification, is only one. Others include function, action, usage and affect. It should be noted that these latter dimensions, unlike the first one, are usually relational: They involve relations between the object and people, events and other objects. Nelson's (1974) position is that a person's concept of an object category may originally develop out of a *synthesis of the various relations and acts into which a new object enters*. Feature representation, necessary for identifying other instances of the category, may be a later development.

There are several important research implications to be derived from the above discussion. First, it poses problems for use of the standard, objectivist categorization literature as a theoretical base for the study of consumer behavior. Thought needs to be given to whether a literature that is, self--admittedly, so critical of its own remoteness from human needs, goals, and events can really be related to the purposeful behavior of consumers. The recent work of cognitive psychologists such as Barsalou (1983, 1985) on goal-related categories indicates that it may be possible to bridge the gap, but only with considerable revision in the nature of the structural constructs. Second, it suggests the value of a relational approach to the study of useful constructs such as similarity and typicality. The attribute listing tasks commonly employed in many studies may be primarily accessing the identification or cue validity component of categorical representation in memory. But as mentioned earlier, this component may be only a small part of the total category concept. For example, Ratneshwar (1987) investigated similarity and typicality judgments in the

snack food category on the basis of structural models where the predictor variables involved judgments of product usage appropriateness across situations. It was verified that a linear composite of the number of common and distinctive usages of pairs of products explained a substantial portion of variance in similarity. It was also verified that prototypicality was highly correlated with the extent to which a product shared usages in common with all other category members. An incidental finding was that typicality was equally well explained by an index of product versatility, namely its overall appropriateness across a variety of usages. Attribute listing data were also obtained as part of this study, and some interesting differences were found in the cases where the usage-based model predicted similarity better than the attribute-based model, and vice versa. The conclusion was that the two methods addressed partly overlapping dimensions of similarity. Third, it suggests that the effect of the pioneering exemplar, that "sets up" the category, on consumer evaluations of subsequent category entrants may have more to do with the manner in which it *affects identifying attributes* rather than the manner in which it "molds" preference. Consumers may infer such identifying attributes from their experience with the pioneering brand, and use them as a heuristic to reduce risk when faced with uncertainty in answering questions such as "Is x (brand) a y (product), and *thus* likely to possess functional attributes f1, f2, f3?" Such an explanation would leave consumer sovereignty intact, and would not imply that the pioneering product derives its advantage out of its ability to shape the consumer's utility structure.

The Role of Usage Context: Consider two sample usage contexts in which beverages might be consumed:

- (1) "A beverage to drink after returning home from a workout on a hot summer day."
- (2) "A beverage to drink while stopping for breakfast at a roadside diner while on a long car trip."

Contrary to one's intuitions, the standard, deterministic theories of category structure do *not* predict differences in the instances of the beverage category brought to mind in the different contexts. This is because typicality of individual beverages is supposed to be independent of context, and since the recall of instances ("exemplar production") is expected to be a function of typicality, it is also not expected to be altered by context. This issue clearly is of considerable significance in view of its implications for choice set formation. Roth and Shoben (1983) discuss various ways in which context may alter the degree of representativeness of particular objects. Context may lead to highly specific expectations for the referent (e.g., only one product or brand could prove useable), or it may serve to shift the focus to specific brands (e.g., Colgate may be thought to be the more prototypical toothpaste when no context is specified, but Crest may be perceived more prototypical in situations where cavity protection is a major buying motive), or it may reorganize the entire typicality structure based upon constraints imposed by the context (e.g., a topping for ice cream could include not only products specifically designated as toppings, but jams and preserves, certain liqueurs and cordials, pancake syrups, crushed fruit, nuts, and melted

candies, etc.). An important implication of such *ad hoc* categorization is that the appropriate product alternatives can go beyond the members of a nominal product category and even include novel or customer-manufactured alternatives. Indeed, in the preceding example only subsets of other product categories could be appropriate to the new use, e.g., all liqueurs would *not* be considered as ice cream toppings (e.g., brandy). Both Roth and Shoben (1983) and Smith and Medin (1981) have pointed out that several modifications need to be introduced in the standard categorization theories to accommodate context effects, and that there is a substantial element of ad hocism in these modifications.

From a "contextualist" perspective, the static or deterministic conceptualization of category structure may be flawed because (a) it does not recognize that an object's meaning may be acquired by an individual through experience with its role in events (Nelson, 1974; Bransford and McCarrell, 1974), and (b) it does not suggest the inherent flexibility in the "remembering" of objects *as a function of the context or setting* (Bransford et al., 1977). The implications of the former were outlined in an earlier section of this paper. As for the latter, Ratneshwar (1987) has emphasized the role of usage situation as a goal context that provides a frame of reference to the consumer when faced with a choice problem. Such a goal context may play a functional role in focusing ("attuning") the consumer's thought processes to the product alternatives appropriate to the particular usage situation, and on the product attributes relevant to situational goals. This in turn suggests that typicality at the "basic" or "common" category level may not be a very good predictor of products or brands brought to mind in specific usage situations. This hypothesis was verified by Ratneshwar (Study II, 1987); it was found that typicality measured at the usage situation-based, ad hoc category level, when compared to typicality measured at the "common" category level, proved to be a much better predictor of the frequency with which products were recalled in particular usage situations ($R^2 = 0.80$ vs. 0.25).

The above discussion has emphasized the role of usage context in terms of its effects on category structure and choice set formation. A similar emphasis on usage context is to be found in consumer-oriented approaches to determining market definition and structure (Day, Shocker and Srivastava, 1979; Srivastava, Alpert and Shocker, 1984; Steffle, 1971). One other normative implication may be briefly mentioned in this regard. To the extent consumer category structures are dominated by the first, presumably prototypical, market entrant, later entrants may find it more worthwhile to position their products by end-use(s) rather than on the basis of category membership. But the former strategy often implies more limited market potential compared to the latter, and the trade-offs involved in these alternative strategies are certainly worthy of further research.

Summary and Conclusions

Rogers and Shoemaker (1971) draw on the anthropological tradition to propose that there are three aspects of an innovation which need to be recognized by change agents:

1. *Form*, which deals with the directly observable physical appearance and substance of an innovation.

2. *Function*, which is the *potential* utility or contribution of the innovation to the adopter.

3. *Meaning*, which is the inherently contextual significance of the innovation to the potential adopter.

A considerable part of this paper has been devoted to issues which in one way or the other involved contrast of "form" with "meaning". It was pointed out that the standard categorization literature with its Aristotelian leaning (attributes of objects "in themselves") tends to ignore the relational nature of object concepts. There is little recognition of the fact that significances are the results of interactions of people (having particular characteristics) with objects having particular form and function, in particular usage, event and cultural contexts. It appears that this literature has not really been able to free itself of its links with the tradition that the philosopher Pepper (1942) termed as "formism", even though concepts such as prototypicality have replaced the "classical" view that categories could be defined in terms of "necessary and sufficient" attributes. Pepper (1942) specifically refers to the tradition known as "transcendent formism" as one which stresses similarity of objects (belonging to the same category) to a plan or a norm; Pepper gives examples such as a shoemaker making shoes to the same design/plan, or different oak trees that approximate the same norm or prototype. (Plato stressed the artisan, and Aristotle the natural categories.) Pepper's definition of a norm or prototype as a "center of a rather vague extensity, claiming as exemplifications objects which closely approximate it and making lesser and lesser claims toward the periphery" is retained in the above literature. He points out that formism is identified with the root metaphor of similarity; that it stresses hierarchical categorical structure; and that its favored method of scientific investigation is through descriptive structural representation. All these attributes are once again to be found in the "standard" categorization literature that has emerged since the early 1970's.

The linkages between "form" and "function" are clearly of crucial importance to marketers. Psychologists who work within the ecological tradition emphasize that it must be the case that there is a non-arbitrary relationship between the two (Gibson, 1979). But the distinction made earlier between *identifying attributes* (which likely emphasize "form") and *core meaning* (which emphasizes "function") indicates that the linkages may be complex, and possibly also phenomenon-specific. Empirical evidence indicates that there is substantial correlation between form-oriented variables such as typicality, and function-oriented variables such as preference (Barsalou, 1983, 1985; Nedungadi and Hutchinson, 1985; Ratneshwar, 1987), but causal directions remain unclear. Clearly, further research is needed to clarify the relationship between the formist categorization literature, with its emphasis on *structural description*, and mainstream marketing literature that deals with the *prediction* of preference-based *choice behavior* (e.g., through fixed or random utility models). An emphasis on "meaning" is a continuation of the tradition that Pepper (1942) refers to as "contextualism", which is associated with people such as William James and John Dewey. Pepper points out that the root

metaphor of contextualism is the "dramatic event". By this he means that the contextualist tends to be preoccupied with phenomena such as "quality" or "meaning", which involve the understanding of things in the context of interconnected events or activities with continuously changing patterns. Unlike formist theories, contextualist theories tend to be dynamic and relational. They tend to emphasize pragmatism in human behavior, and response that is "situationally appropriate". (See Gibson, 1979; Shaw and Bransford, 1977; Bransford, et al., 1977; and Nelson, 1974 for contextualist perspectives on perception and cognition.) Contextualism implies overlapping categorical structures, and emphasizes evolutionary change without sharp discontinuities. In the marketing domain, such a perspective implies that what a product means or signifies to a consumer is not a question that can be answered independent of situational context. We have argued in favor of the value to be obtained from this perspective. This is not to say that there are no insights to be obtained from the use of paradigms based on the standard categorization literature; rather, it is to suggest that such insights need to be balanced against, and related to, alternative perspectives.

Finally, we would note that the inability to control (i.e., consumer sovereignty) suggests that such managerial findings as "first mover advantage" may not always be actionable. Discovery that there is an advantage to being first does not tell one how to become first. *The research which documents a first mover advantage is, after all, retrospective; it looks at categories which have already been formed. Advice that suggests it is desirable to become first is prospective; and its actionability depends upon the manufacturer finding ways to suggest new categories and establish exemplar status for its innovations.* Because the firm can suggest but cannot compel, its ability to realize these objectives may be poor (as the firm in Los Angeles discovered when it set out to build a better ice cream by increasing its butterfat content only to learn that consumers refused to perceive it as ice cream and saw it more as sweet, flavored butter, or the beer company in Pittsburgh found out when it attempted to add fruit flavoring in an attempt to produce a better tasting beer and learned it had invented a beverage that was no longer perceived to be beer). We speculated that the marketing efforts of the firm might enable it to anticipate and affect such results and that research might usefully be devoted to learning how. If the product offering is too similar to what already exists, it is likely to be assimilated by many to an existing category, if not ignored entirely. But if it is very new and different, the likelihood of a new category resulting may also be low. No matter how novel something is, people will attempt to understand it in terms of what they already know. Inability to comprehend for many could result in no categorization and work against the new product's success. Again research aimed at examining boundary conditions (what is too little and too much "newness") should hold pragmatic value for many marketers. The major advantage of a categorization perspective on marketing and strategic issues is that it provides a new way of looking at some old issues. What is a coherent criterion for defining a product-market? What is "newness" in a product and in a category? What is really "new" about a given new product? When do attempts to improve quality lead to new products rather than higher quality old ones? These are just a few of the issues we have touched

upon. Relating them to categorization reveals their connectedness. Our hope is that there will soon be better answers as a consequence of the different perspectives that research into cognitive processing and structures can afford.

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The Industrial User as Product Innovator : Markets, Hierachies and Patterns of User-Initiated Innovation¹

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Abstract

User-initiated product innovation occurs when a firm that has invented a novel device first invests in its internal application as a process innovation and second seeks returns from its general marketing. Three modes of user-initiated product innovation and users' roles in them are distinguished and three explanations of the functional locus of innovation are examined in order to understand better the observed pattern of user-initiated product innovation: the appropriability of benefit, appropriability regimes, and transaction costs theories.

Introduction

The sensitivity of producers of new products to the detailed requirements and behaviors of their potential customers is a crucial determinant of the effective marketing of innovations and their rapid, extensive diffusion. In user-initiated product innovation, the potential for such close understanding is immense. The term refers to a firm's exploitation of an internally-invented device by (a) investing in its application as a process innovation within that firm's own productive system, and (b) benefiting additionally from its marketing and diffusion as a product innovation. In the first phase, *user-initiated process innovation*, the firm gains from the enhancement of its output as a result of the improvement of its production methods; in the second, *user-initiated product innovation* (which is not an automatic progression), from the fees or royalties accruing from leasing or licensing its technological know-how, or the profits deriving from the direct marketing of the new product. Based on detailed case histories of user-initiated innovation at the Warton Unit of British Aerospace (BAe) in Lancashire, England, this paper describes several styles of user involvement in innovation and examines critically theories which elucidate the functional locus of innovation.

The paper relies on precise definitions of process and product innovation, and of user-initiated innovation itself. Process innovation involves the application of capital equipment that is installed by an industrial producer as part of his productive capacity and from which he expects to gain commercially via the economic and/or technical improvement of his output. Product innovation occurs when a new good or service is sold in a consumer or industrial market, from which the supplier gains commercially through increased profits or sales revenues. It follows that the same item can be both a process innovation and a product innovation at different times. User-initiated innovation is a feature of firms rather than households or individual final consumers since it involves at some stage the user-initiator's investment in his invention, i.e. as a capital or producer good which is intended to enhance the efficiency of his operations. Final consumers sometimes suggest new product ideas, e.g. the 'Chopper' bike, but this does not constitute user-initiated innovation as the term is understood here.

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User-Initiated Innovation

Industrial firms perform dual roles in the course of their business: they are not only suppliers of products and services but also customers for the products and services of other firms. Accounts of industrial product innovation have traditionally emphasized the role of the producer, to whom they attribute responsibility for the entire procedure - from idea generation and market exploration, through product development and testing, to commercialization and post-launch management. A decade ago, von Hippel (1978) contrasted this prevailing view of industrial innovation, the manufacturer-active paradigm (MAP), with situations in which users initiate new product development. The customer-active paradigm (CAP) describes situations in which user-firms develop their own ideas, designs or prototype innovations (usually when their usual suppliers cannot quickly provide solutions to urgent technical problems) and subsequently approach a manufacturer with a request to produce and supply the device on a regular basis. The manufacturer may, having explored the market and further developed the innovation, produce and market it for users in general (von Hippel 1978).

In both MAP and CAP, it is the manufacturer who acts entrepreneurially with respect to product innovation. The CAP makes clear that the manufacturer, not the user, is alert to the gains to be made from marketing the innovation widely. The user-initiator of the device fulfills the roles of inventor and process innovator; his main concern is to find a manufacturer who can guarantee reliable supplies and, although the user may receive some royalties or fees, he is not concerned to benefit maximally from the marketing and diffusion of his novel device as a product. But the CAP does not describe the full range of user involvement in industrial new product development. There are instances in which users seek entrepreneurially to benefit as fully as possible from the wider exploitation of their process innovations as products by performing some or all of the functions involved in the later stages of NPD that are ascribed in both MAP and CAP to manufacturers. A third paradigm (Foxall 1986) acknowledges that some user-initiators go on to test and develop the innovation in order to enhance its attractiveness to prospective buyers; some engage in market exploration and research in order to strengthen their bargaining positions vis-a-vis the manufacturer who will eventually produce and distribute the new product; and some assume the entire burden of NPD functions from the idea generation to commercialization and beyond. Such user-initiators are no longer indifferent to the general marketing of the invention and the commercial gains available from its diffusion, but actively engaged in benefiting as fully as possible.

To explore the nature and scope of this third pattern of industrial NPD, detailed case histories have been compiled of user-initiated product innovation in five firms. The following discussion is based on two of these since they provide an overview of the entire scope of user-initiated innovation in a single organization and illustrate the strategic development of a major industrial

company's role as both process and product innovator. The cases concern (i) the operations of the Business Development Group at BAe, Warton; and (ii) the development of control software for flexible manufacturing systems (FMS) by BAe in joint venture with the U.K. General Electric Company (GEC).

BAe, Warton relies heavily on its expertise in the economical deployment of advanced manufacturing techniques (AMT). Its engineers often collaborate with external firms to design, develop or produce process innovations. Such collaboration resulted on occasion in the intellectual property rights to the jointly-produced innovations being secured by the external partner: Warton obtained continued supplies of the device, but the co-developers received commercial benefit of its general marketing. Therefore, Warton established a business Development Group (BDG) to protect its property rights in order to benefit directly from its commercial diffusion.

BDG identifies internally generated and applied innovations with commercial potential, and locates firms that can co-develop, manufacture and market the resulting products. It assesses market demand in conjunction with the personnel responsible for the invention and its process innovation, noting the device's unique qualities and user benefits in order to conclude a profitable licensing agreement with an external manufacturer. BDG

then negotiates, monitors and polices the licensing of the innovation.

Research led to a tripartite classification of manufacturer-user interactions in industrial innovation: manufacturer-initiated innovation (MII) in which the manufacturer is responsible for the entire NPD process and which broadly corresponds to the MAP; user-initiated process innovation; and user-initiated product innovation. It uncovered three forms of the last of these: (i) that in which the user is largely passive and having invented the innovation brings it to the attention of a manufacturer but yields the initiative for its commercial exploitation as a product innovation (broadly the CAP); (ii) that in which the user seeks entrepreneurially to gain from the commercialization of his process innovation as a product, trying to gain maximally from its marketing by licencing it profitably to a firm that undertakes its manufacture and distribution; and (iii) that in which the user carries out all of the tasks involved in the new product development process: having invented and internally applied the innovation, going on to produce and market it. Explanation was sought why user-initiators choose specific modes of user-initiated product innovation. The following section discusses three potential sources of understanding of the functional locus of innovation and analyses the typical examples summarized in Table 1 in terms of their concepts and

Table 1
User-Initiated Innovation

Mode of User-Initiated Innovation	Examples
<p><i>User-Initiated Process Innovation (UI1):</i> The user invents and develops a novel device for internal process application because it cannot be supplied in time or is too specialized or trivial to interest a supplier. The user benefits from the enhancement of output. UI1 innovations may subsequently be commercialized (UI2/3/4) if a market is found.</p>	<p><i>The plastic electric wiring loom pin:</i> produced by Warton with the intention of marketing it generally. No external market has yet been found and the device is applied as a process innovation.</p>
<p><i>Passive User-Initiated Product Innovation (UI2):</i> The user-initiator approaches a manufacturer with an idea, design, or prototype requesting him to supply the device. The manufacturer responds only if the demand from the user-initiator is very large and/or he perceives a large general market for the device which he can exploit. The user may receive royalties or fees but it is the manufacturer who acts entrepreneurially as a product innovator.</p>	<p><i>An aluminium cutting tool:</i> developed by BAe with outside collaborator ; the latter secured the related intellectual property rights and commercialized it generally, leaving BAe with just an internally applicable process innovation.</p>
<p><i>Active User-Initiated Product Innovation (UI3):</i> The user acts entrepreneurially to exploit his process innovation, seeking maximal gain from its diffusion as a product innovation. The user does not produce or directly market the item but strengthens his negotiating position vis-a-vis the external manufacturer with which he becomes quasi-vertically integrated. His involvement may include patenting , primary market demand analysis, and the active policing of contracts.</p>	<p><i>The self-normalising test probe:</i> identifies structural flaws in materials, remaining normal at all times to the test piece, following contours without prior knowledge of shape. Development of the probe to BAe design by a supplier was financed by BAe; the companies patented the device jointly. Supplier makes and markets the probe under a license paying BAe a percentage of the sales revenue.</p>
<p><i>Vertically-Integrated User-Initiated Product Innovation (UI4):</i> The user-initiator undertakes all stages of the industrial NPD sequence. He deploys his innovation in his own productive processes and goes on to manufacture and market it generally. The entrepreneurial involvement of the user is complete.</p>	<p><i>FMS control software:</i> BAe, in joint venture with GEC Electrical Products Ltd., produced this with the intention of applying it internally in both companies and marketing it generally. Initial sales were to BAe and GEC but other firms sought to purchase the system even before it was available.</p>

explanations. The three explanations are summarized in Table 2.

Explanations

Appropriability of benefit (AB): Von Hippel (1982) predicts the functional locus of innovation based on the differential ability of manufacturers and users to benefit from sales of output-embodied innovation knowledge. There is only a remote chance of innovators benefiting from non-embodied innovation knowledge (i.e. as licensed information rather than products or processes): patents afford little protection because obtaining redress is costly and slow, and competitors can 'invent around' the patents; nor do trade secrets ('know-how') provide protection for long: other firms may independently discover the technology, obtain it by accidental disclosure or 'reverse engineering'. The alternative is to gain from output-embodied knowledge, its use as a process or product component, and the consequent enhancement of output. The innovator's ability to benefit from output-embodied knowledge requires setting up a quasi-monopoly, either at the

industry level so that competitors share his knowledge but he (as possessor of dominant market share) benefits most; or at the firm level so that the innovator alone benefits. The former is probable when industry members are protected by entry barriers; the latter when the innovator can benefit through patenting, know-how, or (more usually) the long time period required by an imitator to market a similar product or apply a similar process. During such 'response time', the innovator enjoys a temporary quasi-monopoly and gains from increased profit margins or market share.

Based on limited examples, von Hippel concludes that, in all but one circumstance, it will be the user who benefits, for he can maintain the secrecy of innovation by using it in his factory without revealing it to competitors. The exception occurs when a manufacturer of process machinery establishes a quasi-monopoly based on improved methods of construction and expects to produce and sell enough machines to achieve substantial experience economies.

Table 2
Comparison of Explanations

	Appropriability of Benefit (AB)	Appropriability Regimes (AR)	Transaction Costs (TC)
To explain	the locus of innovation among users and manufacturers	why innovation benefit passes from innovator to users, customers, competitors, etc.	why firms choose integrated governance structures rather than open market trading; i.e. to make, not buy.
Basis of explanation	In order for one or other to benefit there must be a significant difference in their abilities to gain from output-embodied innovation knowledge by creating a quasi-monopoly based on imitators' response time.	Imitators rather than innovators are likely to gain from an innovation in weak appropriability regimes where the imitators control the complementary assets necessary to exploit the core technology commercially.	In view of decision-makers' bounded rationality and tendency to opportunism, when (i) uncertainty, (ii) asset specificity or (iii) transactions frequency impose a certain level of costs, integrated management becomes more economical than market transactions because it supplies better incentives, controls, and information use.
Predictions	Patents and secretable know-how are extremely unlikely to provide the basis of response time; as they are the sole means open to the would-be exploiter of non-embodied innovation knowledge, it is rare indeed in the vast majority of industries for firms to gain from the leasing or licencing of technology.	The innovator in a weak appropriability regime (i.e. who lacks cast iron patents or secretable know-how) must control complementary assets like marketing skills to benefit from his innovation. Control of such assets is essential once the industry standard dominant product design has emerged.	The adoption of integrated organization for the development and marketing of a technological innovation is in (a) direct proportion to the discontinuity of the innovation and the uncertainty of its market acceptance, and (b) inverse proportion to the number of rival sellers of similar innovative technology.

Regime of Appropriability (AR): Teece (1986) asks why the economic returns to technological innovation may accrue not to the innovator but to an imitator. He argues that (i) the strength of the 'regime of appropriability' surrounding the industry, (ii) the stage of development of industrial dominant designs, and (iii) the availability of complementary assets, determine whether the innovator or a competitor gains. 'A regime of appropriability refers to the environmental factors, excluding firm and market structures, that govern an innovator's ability to capture the profits generated by an innovation' (p.287). Its precise nature depends on the technology involved and the extent to which legal measures protect the innovator's intellectual property. At the preparadigmatic stage of the development of an industry (before a generally accepted product design has emerged) the innovator risks investing heavily only to find that imitators benefit by establishing the industry standard (Abernathy and Utterback 1978). Once the dominant product design is established, however, the profitable commercialization of a core innovation technology depends on the use of complementary assets such as marketing and after-sales service that are essential to the exploitation of the core technology which the innovation uses. The more specialized these complementary assets are to the core technology, the greater will be the need for the innovator to control them.

Tight appropriability regimes occur only on rare occasions when patents or trade secrets preclude imitation. If production depends upon specialized assets, the innovator should integrate manufacture and distribution in order to avoid their loss as a result of a partner's possible withdrawal from the contractual agreement. During the paradigmatic stage, effective manufacture and marketing depend on economies of scale, the core technology becomes increasingly imitable, and commercial exploitation of the benefits of the innovation requires control and skillful management of specialized complementary assets such as implementation and use knowledge.

Transaction Costs (TC): Transactions cost analysis is concerned to ascertain the governance structures appropriate to the planning, completion and monitoring of productive tasks. It rests upon two behavioral assumptions: (i) the bounded rationality of decision-making arising from uncertainty, and (ii) the opportunistic behavior of one or other transacting party, specifically when small numbers of competing sellers make it advantageous to be first to market ('nontrivial first mover advantages'). The internalization of transactions which would otherwise occur in the marketplace is justified and impelled by increases in transactions costs deriving from (1) uncertainty, (2) the frequency of transactions, and (3) the transaction-specificity of assets. The impetus to internalise decisions, substituting 'hierarchical, intra-firm control based on sequential, adaptive decision-making' for market exchange based on 'contingent claims contractual bargaining' (in jargon-free terms, to make rather than buy) is predicted to increase directly with these three factors (Williamson 1975, 1981). Once the costs associated with these factors reach a certain level, vertical integration provides a more economical governance structure than market transacting by its provision of incentives and controls, and the facilitation of organisational information processing.

Transactions cost reasoning applied to industrial innovation must acknowledge (i) the complexity of technological innovations which is predicted to increase directly the complexity of the organizational structure in which it is developed and produced, and (ii) the possibility of intermediate forms of integration for the development of particular novel technologies (Globerman 1980). For market contracting to occur it must be possible to specify the market's technical requirements, and the number of suppliers of the technology must be relatively large. Contingent contracting is the apt governance structure in this case because the costs it imposes are lower than the potential costs of administering integrated organisation. But when the development of technology is exploratory and few firms can supply it, first mover advantages make opportunism more likely; integrated R&D/development/production/marketing becomes more probable. Often quasi-vertical integration is sufficient to ensure that divulgence of information by one party to the development/bargaining process will not allow the other to independently produce the technology.

Integration is also more probable, the more discontinuous and complex the technology under development. Hence competitive bidding is the most probable governance structure when precise specification of the required performance and features of the technology is possible; when such specificity is less easy, quasi-integrated contracting is probable; and when breakthrough technology which serves a particular user's needs is under development, the probable governance structure will impose a degree of hierarchy or ownership-based integration, quasi or full.

Analysis

The purpose of the analysis is to understand better the observed patterns of user-initiated innovation using the concepts and general predictions of the three explanations (Table 3).

User-Initiated Process Innovation (UII1)

BAe cannot benefit from non-embodied innovation knowledge (AB): there is no market for the final product (because of technical drawbacks in use) and thus none for the licenced know-how. The user alone can benefit by applying the innovation in his own production system. Patents grant little if any protection and are in any case irrelevant given lack of external demand. The AR approach does not lead to clearcut predictions. In the absence of a market, the user alone stands to benefit and there is no question of an imitator gaining advantage. Both asset specificity and uncertainty (TC) are high. The governance structure is predictably vertical integration since no question of external transacting has arisen.

Passive User-Initiated Product Innovation (UII2)

The cutting tool was open to reverse-engineering and capable of only minimal patent protection. But there is a response time advantage for the first firm to market based on the period needed by imitators to respond and large potential demand. AB reasoning suggests that this is likely to be the manufacturer rather than the user: the former has existing productive capacity and marketing expertise and can achieve significant experience economies more quickly than the user (otherwise the user would not have sought quasi-vertical integration at all.)

Table 3
Summary of UII Examples

Observed innovator	UII1	UII2	UII3	UII4
	User	Mfr	User	User
<i>Appropriability of Benefit</i>				
Output-embodied	Yes	Yes	No	Yes
Patent protection	Weak	Moderate	Moderate	Weak ¹
Secretable know-how	Little	No	Yes	Yes
Response time advantages	na	Moderate	Yes	Yes
<i>Appropriability Regimes</i>				
Strength of regime	na	Weak	Moderate	Tight
Industry standard	na	Yes	Yes	Emergent
Innovator control of complementary assets	na	No	Yes	Yes
<i>Transactions Costs</i>				
Rival sellers	na	Few	Few	Few
Discontinuity	Moderate	Moderate	High	Very high
Asset specificity	High	Moderate	High	Very High
Governance structure	VI	Attempted QVI; market prevails	QVI	VI

Key: Mfr = manufacturer; na = not applicable; QVI = quasi-vertical integration
VI = vertical integration.

The manufacturer is likely to control complementary assets (AR) on which the commercial exploitation of the core technology depends. Specific knowledge about the use value of the innovation gained during its development is equally available to user and manufacturer but the latter has general marketing expertise and distribution skills. The lack of competitive supply and the nontrivial first mover advantages predict opportunism on the part of the manufacturer (TC). The user provided the codeveloper sufficient information to make himself superfluous. The dynamic continuity of the innovation, the moderately high asset specificity involved in developing it, and the large market which motivated the user-initiator to seek quasi-vertical integration equally made the manufacturer's opportunism probable.

Active User-Initiated Product Innovation (UII3).

The AB approach neither predicts nor explains this mode. It suggests that to benefit from the leasing-out of technological knowledge is rare. The innovator cannot protect his non-embodied knowledge by patenting or trade secrets. Moreover, the user-initiator is forced to reveal his technical (and market) knowledge. Yet, contrary to the AB prediction, UII3 is a reality.

The concept of complementary assets (AR) is a useful key, however, to understanding the user's different role and experience in UII3 compared with UII2. The user in UII3 develops a quasi-vertically integrated relationship with the manufacturer by exploiting the information he uniquely possesses about the implementation and productive application of his process innovation. When the product is launched by the manufacturer, the user understands better than any other firm can the problems and potential of investing in the new technology. The manufacturer, who requires maximal response time advantages in the product market, also relies on this information as a complementary asset to assist his marketing of the core technology. The user can prevent

the opportunism of the manufacturer by controlling the release of this complementary asset (TC/AR); sustained quasi-vertical integration is attractive to the manufacturer as well as the user. The user, as a representative of the market in general, acts as a lead-user (von Hippel 1986), providing insights into market needs. The user enjoys a response time advantage not predicted by the AB theory and benefits from the exploitation of non-embodied innovation knowledge. The manufacturer is not opportunistic despite the high asset specificity, technological uncertainty, small numbers and nontrivial first mover advantages, all of which lead to the accurate (TC) prediction of an intermediate degree of integrated control.

Vertically-Integrated User-Initiated Product Innovation (UII4)

The AB theory is not well-equipped to predict the situation in which a user becomes manufacturer and marketer of his own invention, but some aspects of its reasoning are relevant. BAe and GEC established a quasi-monopoly at the level of two horizontally integrated firms based on the response time required by imitators. This in turn stems from the implementation and use knowledge which they uniquely share. But the AB approach deals in distinct roles of user and manufacturer and is not applicable to this situation in which a hybrid appears. The AR stress on complementary assets is again valuable. The hypothesised tendency to full vertical integration when firms seek to establish a dominant product design is also accurate. (At least the subset of the industry which sought to obtain the FMS control software even before it was commercially available was willing to accept the BAe/GEC product as fulfilling the industry standard). Having developed the basic software, the two firms marketed it separately on the basis of individual expertise in applying it, strengthening the vertically integrated frameworks in which subsequent products were produced and marketed. This tendency to

vertical integration is also predictable on TC reasoning: technical and market uncertainty was high because of the discontinuity of the software under development. Asset specificity was very high notably with respect to the human resources involved, and there were enormous first mover advantages, which suggested opportunism on the part of any external manufacturer/marketer would be large.

Conclusion

Several patterns of user-manufacturer involvement in industrial innovation, from the entirely manufacturer-dominated (MII) to the entirely user-dominated (UII4) have been identified. The research extends the MAP/CAP dichotomy and necessitates reexamination of the roles traditionally ascribed to users and manufacturers. The observed patterns of user-initiated innovation transcend not only the user's assumed role in the MAP but also the CAP assumption that the customer is an inventive user rather than a product innovator.

Elements of all three explanations are needed to account for the spectrum of user-initiated innovation presented. While TC analysis offers the most general understanding, its insightful behavioral assumptions and powerful explicatory concepts can still be supplemented usefully by certain AB and AR concepts. The notions of response time and complementary assets are particularly explicit in clarifying the quasi-vertical integration attempted in UII2, achieved in UII3, and the managerial behaviors of user and manufacturer. An important consideration that is beyond the scope of the present study is the problem of marketing new technological products to direct competitors who may suspect the motives of the rival-vendor (Foxall, in press). BAe's customers are not necessarily competitors - the products are in demand in industries far removed from aviation/aerospace - and even direct rivals cannot reject the possible competitive advantages of adopting a technological innovation simply because it is offered by a competitor. This is one of several themes for further research. In the meantime, the analysis begun in this paper confirms the need for studies of industrial diffusion based on novel explanations of discontinuous high technology innovations in competitive contexts (Robertson and Gatignon 1986).

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Characteristics of Adopters and Nonadopters Of Alternative Residential Long-Distance Telephone Services

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Abstract

Adopters and nonadopters of a service innovation, alternative residential long-distance telephone services, are profiled in terms of demographic and psychographic characteristics and product class experience. Monthly long-distance telephone expenditure was the most significant variable in discriminating between adopters and nonadopters. Adopters were described in psychographic terms as price conscious shoppers, convenience prone, housework enthusiasts, and heavy telephone users. To a large extent the demographic profile of the adopters is similar to that of adopters of a number of other innovations. However, dual income family, not a commonly included dimension in adoption studies, was found to be a significant descriptor of adopters of these services.

Introduction

Although studies of adoption and diffusion of a wide variety of products have been reported, the majority of the literature has been devoted to physical products (Rogers 1961; Rogers and Shoemaker 1971; Robertson 1967, 1971; King 1965; Boone 1970; Painter and Penegar 1971; Zaltman and Stiff 1975; LaBay and Kinnear 1981; and Dickerson and Gentry 1983). Some notable exceptions include bank credit cards (Plummer 1971, Adcock, Hirschman, and Goldstucker 1977, Porter, Swerdlow, and Staples 1979), automatic teller machines (Lee 1981), community television antenna service (Marks and Hughes 1976), an unidentified telecommunications service (Green, Carmone, and Wachpress 1977), and automotive diagnostic centers (Kegerris and Engel 1969; Engel, Kegerris, and Blackwell 1969). Consequently, relatively little is known about the consumer process of adopting service innovations. The void remains despite the fact that (1) the service sector is the fastest growing segment of the American economy and now accounts for more than half of the gross national product (Survey of Current Business 1985), (2) enough literature has been accumulated on the subject to constitute a critical mass and research into the marketing of services has begun to acquire a degree of sustained commitment (Berry 1980), and (3) differences between consumer evaluation processes for goods and services have been recognized and the effects of these differences upon the adoption of service innovations have been hypothesized (Ziethaml 1981).

The purpose of this paper is to add to this currently sparse literature related to the adoption of services by presenting the findings from a study of the adoption of a service innovation—alternative residential long-distance telephone services (any supplier other than AT&T). The research identifies the type of individual most likely to adopt this service innovation. More specifically, the research uses demographic characteristics, psychographic factors, and consumer experience to predict the individuals most likely to adopt the service.

Characteristics of the Innovation

Robertson (1967) has delineated three types of innovations: continuous, dynamically continuous, and discontinuous. A continuous innovation has the least effect on behavioral patterns and involves the alteration of an existing product. A dynamically continuous innovation causes some, though not substantial, changes in behavioral patterns. It may involve creation of a new product or modification of an existing one. A discontinuous innovation involves a new product and the establishment of new patterns of behavior.

Robertson (1971) concluded that while most studies of the adoption of innovations have investigated discontinuous innovations, most innovations fall into the other two categories. Using Robertson's definitional schemes, the alternative services are a dynamically continuous innovation—similar to the touch-tone telephone (a physical product and an example Robertson used for the category). The innovation involves the alteration of an existing product (a service historically offered by AT&T) and adoption involves some, though not substantial changes in existing behavioral patterns.

Rogers (1961) identified five characteristics that affect the rate at which an innovation is adopted: relative advantage, compatibility, complexity, divisibility, (triability), and communicability (observability). Later Fliegel and Kivlin (1972) expanded upon Roger's list and identified financial and social cost, as other relevant characteristics affecting the rate of an innovation's adoption. More recently, Ziethaml (1981) hypothesized that the unique characteristics of services—intangibility, nonstandardization, and simultaneous production and consumption—negatively affect a service innovation's rate of adoption.

Previous research (Robertson 1971; Rogers and Shoemaker 1971) has shown that the adoption process is positively related to the product's relative advantage, compatibility, divisibility, and communicability and negatively related to its complexity and cost. Alternative long-distance telephone services offer relative compatibility with previous usage routines, are not overly complex, and offer a cost advantage. These characteristics should serve to speed the adoption process. However, the inherent characteristics related to services along with the difficulty of divisibility and communicability should tend to slow the adoption process.

Characteristics of Adopters

The purpose of this section is to review past research that provides profiles of adopters of innovations. Time has traditionally been used to identify adopter categories (Rogers 1962). However, it has been asserted that innovativeness and time of adoption are not synonymous concepts—that innovativeness is the degree to which an individual makes innovation decisions independently of the communicated experiences of others (Midgley 1976;

Midgley and Dowling 1978). Because of this controversy and since the diffusion process was ongoing, there is no attempt to sub-divide adopters into categories: innovators, early adopters, etc.

Demographic Characteristics

Virtually all studies of adoption and diffusion have included demographic characteristics as predictor variables. Most of the studies have found that early adopters have more education and higher incomes, than nonadopters (Kegerris and Engel 1969; Boone 1970; Plummer 1971; Robertson 1971; Rogers and Shoemaker 1971; Rogers and Stanfield 1968; Feldman and Armstrong 1975; Adcock, Hirschman and Goldstucker 1977). It was expected that similar results would be found for adopters of alternative long-distance services. Although the adoption of the service does not require the expenditure of a large amount of money (in fact adoption should reduce the total cost of long-distance calls), it was hypothesized that higher income households are prone to make more long-distance calls. Consequently, they have an opportunity to experience greater overall savings. While the service itself and the utilization of the service are not overly complex, more education could be related to easier understanding and utilization.

Findings relative to the role of age in the adoption of innovations have not been consistent. Some studies have found older consumers to more likely be adopters (Rogers and Shoemaker 1971; Dickerson and Gentry 1983), while others have found adopters to be younger (Plummer 1971; Adcock, Hirschman, and Goldstucker 1977; Porter, Swerdlow, and Staples 1979; Lee 1981, Feldman and Armstrong 1975; McClurg and Andrews 1974; LaBay and Kinnear 1981). Gilley and Ziethaml (1985) studied the adoption of technologies among elderly consumers and found that different communications media (direct mail and print) may be necessary in order to effectively reach this growing segment of the population.

The different types of products studied can explain some of the contradiction. Since income tends to increase with age, innovations involving high financial risk (e.g. home computers) are more likely to be adopted by older consumers. Innovations, such as automatic teller machines, do not require large financial costs and, therefore, there are no financial obstacles to younger consumers. Since there are no financial obstacles to hinder the adoption of the alternative long-distance services, adopters were expected to be younger than nonadopters.

Employment status of spouse (dual-income family) is one demographic characteristic that had not been included in most studies of adoption. However, given the current large number of two income households, this variable was included. Expectation was that dual income families would have higher incomes and, consequently, more likely be heavier users of long-distance telephone service. Therefore, dual income families were hypothesized to be more likely to adopt an alternative long-distance service than one-income families.

Psychographic Characteristics

Psychographics have been included in the study of adoption of a number of innovations. Some studies have found that early adopters tend to be more active, urbane, fashion conscious, risk-oriented, achievement-oriented, contemporary minded, gregarious, and involved in a number of activities: bank credit cards (Adcock,

Hirschman, and Goldstucker 1977; Plummer 1971; Porter, Swerdlow and Staples 1979); men's fashions (Darden and Reynolds 1972; 1979); shopping patterns (Darden and Perreault 1976); and automatic teller machines (Lee 1981). It was expected that the psychographic profile of the adopter of alternative long-distance telephone services would be similar to that found in the earlier studies.

Previous Experience

Although prior related experience has not commonly been a part of the study of adoption of innovations, it is logical to expect that experience with a broad product class affects the adoption of an innovation related to that product class. Zaltman and Stiff (1973) reported that the amount of experience a consumer had with a product category positively affected the rate at which an innovation was adopted. Taylor (1977) found innovative behavior to be very dependent on product class use. Hirschman (1980b) suggested that prior knowledge or experience with a product category may lead to increased ability to determine superior new products within the category, positively affecting the rate of adoption. One of the two components Hirschman (1980a, 1980b) offered as determinants of a consumer's creativity was the individual's repertoire of consumption situations. The repertoire should be a function of the number of similar purchase experiences (Hirschman 1980b). Therefore, it was expected that the amount of experience (as measured by monthly long-distance telephone expenditures) would positively affect the rate of adoption.

Hypotheses

The purpose of this study was to gain insight into the adoption of alternative long-distance telephone services by investigating the demographic and psychographic characteristics that tend to differentiate between adopters and nonadopters of this service innovation. The following hypotheses were tested:

Hypothesis 1: Adopters of alternative long-distance telephone services will be younger, in a dual income family, have higher incomes and more education than nonadopters.

This hypothesis is consistent with the generalized profile of adopters of innovations cited above, with one addition, dual income family.

Hypothesis 2: Adopters of alternative long-distance telephone services will be described by the psychographic factors of price conscious shopper, fashion conscious, community concerned, new brand trier, heavy telephone user, and convenience prone to a greater extent than will nonadopters.

Hypothesis 2 is also consistent with the generalized profile of adopters of other innovations.

Hypothesis 3: Adopters of alternative long-distance telephone services will have more experience with long-distance telephone service, i.e., adopters will be

heavier users of long-distance than nonadopters.

Hypothesis three is based upon the finding of Zaltman and Stiff (1973) that the amount of experience a consumer has with a product category positively affects the rate of adoption and Taylor's (1977) finding that innovative behavior is very dependent on product class use.

Methodology

The universe for the research was limited to a large Southern metropolitan area. Since, at the time the research was conducted, the incidence of subscription to an alternative residential long-distance telephone service was relatively low, a random sample of residences would have had to be very large in order to locate an adequate number of adopters for meaningful analysis. Therefore, instead of obtaining a single large random sample, cooperation was secured from two alternative long-distance suppliers who furnished random samples of their subscribers. Utilization of these lists insured an adequate number of adopters for meaningful analysis.

In addition, a mailing list of telephone-owning households was purchased. The supplier constructed the mailing list in the following manner. First, the relative population by zip code area was determined. The proportion of questionnaires mailed to each zip code was the same as that zip code's proportion of the total population. Then a random sample was selected for each zip code. The mailing list served both as a measure of the rate of adoption and as a source for locating nonadopters. The approach was similar to LaBay and Kinnear (1981) and Dickerson and Gentry (1983).

An equal number of questionnaires was mailed to each group (1,000 to the mailing list and 1,000 to the subscriber lists—500 to each company's subscribers). A reminder postcard was mailed one week after the original mailing.

The four-page questionnaire contained an introductory section which included awareness and experience variables, a psychographic section and a

demographic section. A summary of the specific variables is shown in Table 1. Standard demographics were used and need no further elaboration. The psychographic variables are described below.

Psychographic Variables

Respondents were asked to use a five point Likert agree-disagree scale to rate themselves on 43 lifestyle statements. The majority of these statements were taken from the Wells and Tigert (1971) study. The remaining statements were directly related to telephone usage and had been included in previous research (Spiers 1975). Inclusion of the telephone related statements is based upon Ostlund's (1974) findings that product perceptions are better predictors of adoption than personal variables.

An alpha factor analysis of all 43 items was completed. Following Hair and others (1979), items with factor loading of .30 or higher on a factor and less than .30 on other factors were used for factor construction. The resulting factors closely correspond to those developed by Wells and Tigert (1971). Some minor differences, however, were found. For example, one statement failed to load on each of two expected factors and two statements failed to load on each of two other expected factors. The telephone related statements formed two factors.

Coefficient alpha was used to test the internal consistency of the factor items. These are shown in Table 1. The range of coefficient alphas for the factors are somewhat low (.49 to .78) but within the range of acceptability suggested by Nunnally (1967) for basic research and relatively comparable to ranges found in other studies that have used lifestyle measures. The range compares very favorably with the .28 to .81 reported by Dickerson and Gentry (1983). Further, the range is comparable to the .52 to .83 and .55 to .89 split-half reliabilities reported by Darden and Perreault (1976) and Darden and Reynolds (1974).

The internal consistency of each of the telephone rated factors was relatively low: .50 for "convenience

TABLE 1
SUMMARY OF VARIABLES USED IN THE STUDY
INDEPENDENT VARIABLES

Adopters and nonadopters of alternative long-distance telephone services

INDEPENDENT VARIABLES			
Demographic Variables	Psychographic Factors	Number of Items in Factors	Coefficient Alpha
Sex	Price Conscious Shoppers	5	.76
Marital Status	Credit User	4	.76
Age	Community Concerned	3	.78
Education	Fashion Conscious	3	.69
Home Ownership	New Brand Trier	3	.58
Employment status of respondent	Housework Enthusiast	2	.76
	Convenience Prone	2	.50
Employment status of spouse	Heavy Telephone User	2	.60
	Information Seeker	3	.49
Income	Self-Confident	3	.71
	Homebody	4	.64
Experience Variable monthly l.d. telephone expenditure	Opinion Leader	2	.53

prone" and .60 for "heavy telephone user." Further, each of the factors consists of only two items. (Convenience prone: "I prefer pushbutton phones even if they are more expensive," and "I prefer to have several phones in my house for convenience;" Heavy telephone user: "I probably make more long-distance calls than most people I know," and "I spend a lot of time talking on the phone.") Additional development of these concepts is needed in future research.

Results

Of the 1,000 questionnaires mailed to the alternative long-distance subscribers, 429 were completed and returned, yielding a response rate of 42.9 percent; 303 of the 1,000 questionnaires mailed to the purchased mailing list were completed and returned, yielding a 30.3 percent response rate. The overall response rate was 36.6 percent, yielding 732 usable questionnaires. Since, for reasons of security, the cooperating long-distance suppliers would not release the names of their subscribers to the researchers, it was not possible to investigate non-response bias. Non-response bias has been investigated in similar studies (LaBay and Kinnear 1981; Dickerson and Gentry 1983; Ziethaml, Parasuraman and Berry 1985) and there were no statistically significant differences in the demographics of total respondents and non-respondents or in sub-cells of respondents/non-respondents in any of these reported studies. Consequently, there is little, if any, reason to expect that non-response bias would significantly affect the findings from this study.

Adopters of alternative residential long-distance telephone services were defined as those who reported current usage of any company other than American Telephone and Telegraph (AT&T) as either their primary or secondary supplier of long-distance telephone service. Fifty-seven of the respondents from the purchased mailing list were classified as adopters and 24 of the respondents from the subscribers' lists were classified as nonadopters. Nineteen percent of the respondents from the mailing list were adopters, which is about the same as the estimated rate of adoption at that time as reported in the local press (Brennen 1985). The demographic profiles of adopters and nonadopters are shown in Table 2.

Hypothesis 1. Hypothesis one stated that adopters of alternative long-distance telephone services are more likely to be younger, be a member of a dual income family, have higher incomes and more education. A stepwise, Wilks discriminant analysis (in which the variable that maximizes the F ratio also minimizes Wilks lambda, a measure of group discrimination) was completed to investigate differences between adopters and nonadopters of the services (long-distance telephone usage was included in the analysis). The total sample was divided into an analysis subgroup of 425 respondents and a holdout group of 307 respondents. The discriminant function is validated by estimating the function on half of the sample and then applying the function to the hold-out sample. The discriminant function discriminated significantly between the two adopter groups ($\chi^2 = 61.6, 4df, p = .0000$). The standardized discriminant function is:

$$D = .83 \text{ monthly 1.d. telephone expenditure} - .33 \text{ age} + .27 \text{ education} + .21 \text{ dual income of family}$$

TABLE 2
DISTRIBUTION OF DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

Variables	Adopters (N=465)	Non-adopters (N=260)
Sex		
Male	57.4	53.1
Female	42.6	46.9
Marital Status		
Single	27.5	36.0
Married	72.5	64.0
Age		
Under 20	1.1	2.0
20 — 29	24.4	12.6
30 — 39	31.5	30.8
40 — 49	20.7	17.4
50 — 59	16.2	15.0
60 — 69	5.2	15.4
70 and over	1.1	6.7
Education		
Some High School or Less	1.4	6.2
Comp. High School	12.9	25.1
Some College	33.9	30.1
Comp. College	24.5	19.3
Some Grad. Work	11.4	5.4
Grad. Degree	15.9	13.9
Employment Status of Respondent		
Full Time	76.1	62.3
Part Time	7.3	9.2
Unemployed	2.8	3.8
Retired	6.2	15.8
Full Time Hm. Maker	7.5	8.8
Employment Status of Spouse		
Full Time	45.7	33.3
Part Time	8.7	6.7
Unemployed	3.4	2.0
Retired	2.7	10.7
Full Time Hm. Maker	15.0	12.3
No Spouse	24.4	34.9
Income		
Less than \$10,000	2.0	4.1
\$10,000 — 14,999	4.3	8.1
15,000 — 19,999	6.8	15.6
20,000 — 24,999	11.5	15.6
25,000 — 29,999	10.0	12.6
30,000 — 34,999	11.1	7.3
35,000 — 39,999	11.8	8.2
40,000 — 44,999	8.6	6.9
45,000 — 49,999	9.0	5.7
50,000 — and over	26.0	15.9
Monthly Long-Distance Telephone Expenditure		
Less than \$10	13.2	49.2
\$11 — 20	13.0	19.0
21 — 29	16.8	9.2
30 — 50	23.2	14.0
51 — 79	10.2	3.5
80 or more	23.6	5.1

The analysis correctly identified 69.1 percent of the analysis group and 68.5 percent of the holdout group. The hypothesis was partially supported. Adopters were younger, had more education, and were more likely to be a member of a dual income family.

However, there was no significant difference in the income of adopters and nonadopters.

Hypothesis 2. Hypothesis Two stated that adopters of alternative long-distance telephone services would more likely be described as price conscious shoppers, fashion conscious, community concerned, new brand tries, heavy telephone users and convenience prone. The psychographic factors did significantly discriminate between adopters and nonadopters of the services. ($\chi^2 = 66.6$, 8df, $p = .0000$). The standardized discriminant function is:

D = .48 price conscious shopper - .34
community concerned - .20 fashion conscious -
.29 new brand trier + .18 housework enthusiast
+ .57 convenience prone + .79 heavy telephone
user - .18 information seeker.

The analysis correctly identified 68 percent of the analysis group and 69 percent of the holdout group. The hypothesis was partially supported. Adopters were price conscious shoppers, convenience prone, heavy telephone users, but also household enthusiast. However, community concerned, fashion conscious, and new brand triers were not descriptors of adopters, nor was information seeker. The failure of "new brand trier" to describe adopters of the service is surprising and contrary to the findings from most studies of adoption. Perhaps the propensity of a consumer to try new physical products does not translate to a propensity to try new service products. Credit usage, self-confidence, social interaction (homebody), and opinion leadership did not significantly discriminate between adopters and nonadopters of the long-distance telephone services.

Hypothesis 3. Hypothesis Three stated that adopters of alternative long-distance telephone services will have had more experience, i.e., be heavier users of long-distance than nonadopters. Monthly long-distance telephone expenditure was taken as a measure of this dimension and, as noted above, was included with the demographic characteristics in that discriminant analysis. The hypothesis was supported.

Summary and Implications

The profile of the adopter of a service innovation, alternative residential long-distance telephone services, was investigated in this study. To a large extent, the adopter profile is similar to that of the adopters of a number of other innovations—demographically adopters were younger and better educated. However, there was no significant difference in the incomes of adopters and nonadopters. Dual income family, not a demographic characteristic commonly included in other studies of the adoption process, was found to be significant in the adoption of the services.

In terms of lifestyle, the psychographic factors that were found to be significant predictors of adoption were price conscious shoppers, heavy telephone users, convenience prone, and housework enthusiasts. Adopters were not community concerned, fashion conscious, new brand triers, nor information seekers. "New brand trier" has usually been found to be a description of adopters. Its failure to describe adopters of these services is both surprising and perplexing. Perhaps one's propensity to try new physical goods and new service products differs. Additional research is needed to explore this area.

As suggested by previous research (Dickerson and Gentry 1983; Hirschman 1980a; 1980b; Taylor 1977; Zaltman and Stiff 1973), product class experience played an integral role in the adoption of residential alternative long-distance telephone services. Monthly expenditure for long-distance telephone calls was the most significant variable in discriminating between adopters and nonadopters of the services.

The study was limited to one service product and, consequently, the findings are directly relevant only to that product category. However, Lovelock (1983) has suggested that there are some characteristics of services that transcend industry boundaries and that affect the way marketing is practiced. By recognizing which characteristics their own services share with other services, marketing managers may look beyond their immediate competitors for new insights into how to resolve the problems they face. Then, following Lovelock, the findings are potentially relevant to the marketing of future service innovations that are similar to residential alternative long-distance telephone services.

Finally, the findings tend to lend support to a hypothesis that the adoption of physical products and service products is similar. However, much additional research into the adoption of service innovations is needed in order to test such a hypothesis. Such research should address the suggestions of Gatignon and Robertson (1985) and consider interactions among diffusion constructs as well as marketing and competitive initiatives. The findings are additional evidence of the failure to find empirical support for a concept of "innovativeness" that is generalizable over a wide range of products (Robertson 1967; 1971; Schiffman 1972).

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Investigating Differences in the Roles of Enduring and Instrumentally Involved Consumers in the Diffusion Process

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ABSTRACT

This paper argues that enduringly involved consumers can have a significant impact on the diffusion process. It reviews related literature in the involvement, opinion leadership and innovation fields to support this thesis. It also shows, based on a study of the movie seeing behaviors of 317 undergraduate students, that enduring involvement has significant positive relationships with elements of the diffusion process such as opinion leadership and innovative behavior.

INTRODUCTION

Gatignon and Robertson (1985) note that while consumer behaviorists have made significant contributions to the diffusion literature, this contribution has mainly been in terms of testing relationships between concepts that have been proposed in the diffusion literature of other fields. They argue that concepts that have been developed by consumer behaviorists can have an important impact on our understanding of the process by which products and services diffuse across market segments.

Enduring involvement is one such consumer behavior concept. It has the potential to differentiate those who promote diffusion from those who do not (Bloch and Richins 1983). However, the role of enduring involvement in diffusion has not been systematically studied either theoretically or empirically. This paper argues and finds support for the role of enduring involvement in the process of diffusion. It shows that, as compared to instrumentally involved consumers, enduringly involved consumers tend to seek information on an ongoing basis, have considerable product knowledge and expertise, influence other people's behavior, and buy new products.

RELEVANT RESEARCH

Enduring involvement and the diffusion elements

Enduring involvement is the "long-term, cross-situational perception of product importance based on the strength of a product's relationship to an individual's central needs and values" (Bloch and Richins 1983; p. 72). It is akin to the concept of ego involvement (Sherif and Cantril 1947), in that the product is central to the consumer's identity. An enduring involved consumer has a strong hobby-like interest in or enthusiasm for the product, sometimes this interest can even take on an obsessional quality. This product interest is one form of self expression for enduringly involved consumers. It helps individuals establish their relationship with the rest of the world.

The very nature of enduring involvement suggests that enduringly involved consumers could play an important role in the diffusion process. It seems logical that individuals who consider a product central to their self identity will seek and share information about the product, be knowledgeable about the product class and tend to buy new products in the product class. Some conceptual and empirical support for this thesis is found in the research on enduring involvement, opinion

leadership and innovative behavior. Although, much of this research focuses on relationships between concepts that similar to enduring involvement, such as product interest, and one or two elements of the diffusion process.

Corey (1971) contends that the unique involvement of opinion leaders with a product class distinguishes them from non-leaders. Opinion leadership comprises the dimensions of influence, expertise, information sharing and innovative behavior (Asseal 1987; Myers and Robertson 1971). In support, Summers (1970) found that involvement with womens' clothing fashions is the strongest of five variable sets that influence opinion leadership. The others are demographics, sociological variables, personality, media exposure and attitudes and values. His seven item measure of opinion leadership primarily tapped the dimension of information sharing. Further support is provided by Myers and Robertson (1971) among women opinion leaders for 12 product categories such as entertaining at home and personal care and cosmetics. They found that interest in the product class is related to the amount of influence the consumer yields. This research on the relationship of interest with opinion leadership, information sharing and influence, suggests a positive relationship of enduring involvement with other elements of the diffusion process such as innovative behavior.

Support for the relationship between enduring involvement and new product adoption is provided by Bloch, Sherrell and Ridgway (1986) and Venkatraman (1987). The former report that consumers enduringly involved with clothing and personal computers consider it important to keep up with new product developments. While, Venkatraman (1987) found that consumers who are enduringly involved with the personal computer, food processor and video cassette recorder respectively, are prone to buy innovations in these product categories.

Bloch, Sherrell and Ridgway (1986) also found strong positive relationships between enduring involvement and on-going information search. Enduringly involved consumers are likely to visit stores, discuss the product with friends, other users and sales people, and read ads/articles about the product without any specific purchase motivation. This is supported by Richins and Bloch (1986) who found that consumers enduringly involved with automobiles, seek information from media and interpersonal sources and disseminate information to others. More importantly, they found that the information seeking and sharing characteristics of enduring involved consumers are stable over time.

In conclusion, there is some support (most of it indirect) for the thesis that enduring involvement is related to elements of the diffusion process such as opinion leadership, innovative behavior, influence, information seeking and information sharing. Here the relationship of involvement with usage rate and expertise is also examined. Largely because heavier use of a product class is a distinguishing characteristic of adopters (Dickerson and Gentry 1983; Taylor 1977) and expertise is a distinguishing characteristic of opinion leaders (Jacoby and Hoyer 1981).

Instrumental involvement and diffusion elements

Instrumental involvement is a temporary perception of product importance based on a "consumer's desire to obtain particular extrinsic goals that may derive from the purchase and/or usage of the product" (Bloch and Richins 1983; p. 72). This concept is conceptually equivalent to the importance dimension of the perceived risk concept (Bauer 1960). There is no reason either conceptual or empirical to expect that instrumental involvement plays an important role in the diffusion process. In fact, Venkatraman (1987) found that instrumental involvement with a personal computer, food processor and video cassette recorder respectively is not related to proneness to innovate with new products in these product categories.

It is clear that past research suggests that enduring and instrumental involvement have different relationships with diffusion elements. The relationship of enduring involvement with these elements is expected to be stronger than that of instrumental involvement. Therefore the hypothesis is:

Hypothesis 1: As compared to instrumental involvement, enduring involvement has stronger positive relationships with elements of the diffusion process such as opinion leadership, innovative behavior, information seeking, information sharing, influence, expertise and usage rate.

METHODOLOGY**Product Class**

It is clear that consumer products differ in the degree of enduring and instrumental involvement they engender (Bloch and Richins 1983). For example, some products such as cars and personal computers foster high enduring involvement, while others such as liquid soap and safety pins do not inspire the same degree of enduring involvement. This is one reason for carefully selecting the product class studied in this research.

After careful consideration, movies were selected as the product class of interest for several reasons. First, enduring and instrumental involvement with movies is expected to vary over a relatively wide range. Second, movies are inexpensive enough that the chances of income confounding the results is reduced. Third, since new movies are released every week this provides ample opportunity for new product purchase. However, new movies are continuous (and not discontinuous) new products, since seeing a new movie does not require changes in attitudes or behavior (Robertson 1971). Therefore, it is expected that the adoption processes for new movies may be different from those of discontinuous innovations. However, the elements of the diffusion process studied here, such as influence and expertise are equally relevant in the diffusion of new movies as they would be in the diffusion of a discontinuous innovation. Especially, since word of mouth and interpersonal influence play very important roles in influencing movie-going behavior.

Sample

The sample consisted of 317 undergraduate students at a leading northeastern university. The data was collected by students enrolled in an undergraduate

Marketing Research class. At the beginning of the semester, each student was instructed to ask 10 non-class students to participate in a project which involved responding to four questionnaires over the entire semester. These questionnaires focused on opinion leadership, innovativeness and other related topics with respect to movie seeing behaviors. For other details contact the author.

Measures

With the exception of opinion leadership, multi-item scales were developed to measure the constructs studied in this research. These measures comprised Likert-type scales with a 5 point response format, where '1' is the lowest point on the scale and '5' is the highest point.

Involvement: Items that measure enduring involvement should assess the centrality of the product to the individual's lifestyle (Bloch and Richins 1983). The 10 item scale developed to measure this construct comprised items such as "Movies are more than mere entertainment to me. They are like a hobby" and "I consider myself a movie buff."

Instrumental involvement is measured by developing a list of motives/goals for seeing movies and assessing the importance of each goal (Bloch and Richins 1983). The scale developed for this study included 11 goals such as "Avoiding a movie that is a waste of money" and "Selecting a movie that helps me escape from every day problems for a while."

Opinion Leadership: This construct was measured by Childers version of the King and Summers (1970) opinion leadership scale. This 7 item self designating scale was preferred to the previous version since Childers (1986) shows that it has better construct validity properties.

Innovative behavior: The measure of innovative behavior was developed based on Midgley and Dowling 1978. The four item measure developed here was neither too specific that most people would be non-adopters nor so general that it measured inherent and not actualized innovativeness. It comprised items such as "I often try to see sneak previews of movies before they are officially released" and "I often try to attend movie premiers."

Ongoing Information Seeking Behavior: A 4 item scale was developed based on Bloch, Sherrell and Ridgway (1986). It comprised items such as "I read the newspaper's arts and entertainment section every day" and "I read the film section in the Phoenix every week."

Information sharing: This scale is intended to measure the extent to which individuals talk to friends about movies, discuss and listen to other people's opinions and share their opinions with others. The eight item measure of information sharing included items such as "I regularly ask friends for their opinions of movies I am thinking of seeing" and "My friends and I often discuss what movies are worth seeing."

Influence: A six item measure of influence was developed for this study. It included items such as "I'm usually the one in my group who suggests going to a movie" and "I'll often steer my friends away from movies I did not like."

Expertise: A five item measure was developed to measure expertise. This measure included items such as "I usually know what my favorite actors and directors are working on" and "I generally know the showtime schedules of theatres I go to."

Frequency of seeing movies: This variable was measured by the item, "On an average how often do you go to the movies each month?. Responses ranged from "Less than once a month" to "More than eight times a month."

ANALYSIS AND RESULTS

Reliability Analysis

The Cronbach's alpha statistic was computed to assess scale reliability. This statistic shows that all measures satisfy the Nunnally (1978) reliability criterion of .70 (Refer Table 1). The alpha coefficients for the enduring and instrumental involvement scales are .80 and .72 respectively.

TABLE 1
THE RELATIONSHIP OF ENDURING AND INSTRUMENTAL INVOLVEMENT WITH ELEMENTS OF THE DIFFUSION PROCESS

Diffusion Element	Alpha	Involvement		Rindskopf F-value ^a
		Enduring Beta	Instrumental Beta	
Opinion Leadership	.77	.43**	.22**	3.78
Innovative Behavior	.71	.61**	-.07	93.87**
Information Seeking	.70	.48**	-.11*	58.59**
Information Sharing	.71	.30**	.32**	1.55
Influence	.75	.54**	.17**	18.60**
Expertise	.75	.64**	-.01	84.03**
Frequency of seeing movies	na ^b	.49**	.04	30.57**

^a The degrees of freedom for the Rindskopf statistic are 1,315.

^b 1 item variable

** Significant at $p < .01$.

* Significant at $p < .05$.

Hypothesis test

To test hypothesis 1 each diffusion element was separately regressed against enduring and instrumental involvement. The betas for the involvement types were compared using Rindskopf's F statistic (Rindskopf 1984). A significant F-statistic ($p < .01$) indicates that the betas are not equal. Further, an examination of the magnitude of the betas shows their relative strength.

This analysis generally supports the hypothesized difference in the relationships of enduring and instrumental involvement with diffusion elements. Compared to instrumental involvement, enduring involvement has stronger positive relationships ($p < .01$) with innovative behavior, on-going information seeking, influence, expertise and frequency of seeing movies. The relationship of enduring and instrumental involvement with opinion leadership is significantly different at $p < .10$, while the involvement types do not differ in their relationship with information sharing.

Since, consumers generally are to some extent both enduringly and instrumentally involved with a purchase, it is not sufficient to look at the direct main effect relationships between involvement and diffusion

elements. It is also important to identify the enduring and instrumental involvement profiles of consumers.

Development of involvement clusters

One approach for identifying involvement clusters is to use the high-low dichotomy to categorize consumers into four clusters based on their enduring and instrumental involvement scores. However, there is no theoretical or empirical reason for expecting a four cluster solution. Therefore, to identify the number of clusters in the data, based on Milligan and Cooper's evaluation of 30 procedures, the Calinski and Harabasz index was computed (Milligan and Cooper 1985). This index is the $[\text{trace } B/(k-1)]/[\text{trace } W/(n-k)]$, where n and k are the total number of cases and the number of clusters in the solution respectively. B and W are the between and pooled within cluster sum of squares and cross products matrices. The cluster solution with the highest index is the best fit to the data.

The SPSSX clustering algorithm with Ward's clustering method and Squared Euclidean distance measure was used for several clustering solutions, till a clear upper limit on the Calinski and Harabasz index was obtained. This index was highest for the *three* cluster solution, after which it tapered down, indicating that the data comprised three involvement profiles. The clusters comprised 92, 138 and 87 consumers respectively. The mean enduring involvement scores for the three clusters are 3.13, 2.25 and 3.38 and the mean instrumental involvement scores are 3.09, 3.59 and 3.99.

The first cluster is termed the enduringly involved group. Compared to the other groups, they are moderately high on enduring involvement and lowest on instrumental involvement. The second cluster is the instrumentally involved group. They are moderately high on instrumental involvement and lowest on enduring involvement. The third group is termed the highly involved group since they have the highest scores on both enduring and instrumental involvement. Group mean scores on each diffusion element are compared using oneway analysis of variance. Group pairs are compared using the Scheffe contrast procedure ($p < .05$).

Since enduring involvement is an on-going stable trait it represents the baseline level of involvement with a product. The transitory situation specific instrumental involvement should enhance the level of enduring involvement. Therefore, it is expected that the highly involved consumers will play the most important role in the diffusion process. Further based on Table 1 results, it is expected that enduringly involved consumers will play a more important role as compared to instrumentally involved consumers.

Profiling the involvement clusters

Table 2 describes differences between clusters in terms of the diffusion elements. An examination of the results reveals that they are consistent with apriori expectations. The highly involved group has the highest scores on each diffusion element. In the case of opinion leadership, information sharing, and influence the scores are higher than both the enduring and instrumentally involved group. While, the highly and enduringly involved consumers have the same levels of innovative behavior, information seeking, expertise and frequency of seeing movies.

TABLE 2
PROFILING THE INVOLVEMENT CLUSTERS IN TERMS OF THE DIFFUSION ELEMENTS

Diffusion Element	GROUP 1	GROUP 2	GROUP 3	F-Ratio (df=2,315)	Scheffe Contrast
	Enduringly Involved	Instrumentally Involved	Enduring & Instrumentally Involved		
	Mean (sd)	Mean (sd)	Mean (sd)		
Opinion Leadership	3.40 (.63)	3.19 (.62)	3.77 (.67)	22.22**	3,1; 3,2
Innovative Behavior	3.01 (.74)	2.30 (.57)	3.05 (.80)	43.35**	2,1; 2,3
Information Seeking	2.72 (.78)	1.99 (.67)	2.60 (.90)	30.16**	3,2; 2,1
Information Sharing	3.25 (.56)	3.24 (.51)	3.61 (.51)	15.52**	3,2; 3,1
Influence	3.37 (.64)	3.05 (.58)	3.65 (.53)	29.45**	3,1; 3,2; 1,2
Expertise	2.96 (.73)	2.30 (.60)	3.09 (.80)	43.58**	2,1; 2,3
Frequency of seeing movies	2.44 (1.44)	1.80 (.66)	2.67 (.91)	29.03**	2,1; 2,3

** F Ratio significant at $p < .01$.

Further, enduringly involved consumers play a more important role in the diffusion process as compared to instrumentally involved consumers. On all diffusion elements except information sharing they have significantly higher scores as compared to instrumentally involved consumers.

CONCLUSION¹

In conclusion, enduring and instrumental involvement play very different roles in the process of diffusion. Enduring involvement has significantly stronger relationships with elements of the diffusion process as compared to instrumental involvement. Further, these involvement types cluster in three involvement segments viz., the enduringly, instrumentally and highly involved consumers. Of these segments, the highly involved consumers play a very important role in the diffusion process as compared to the other two segments.

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¹The Discussion, Implications and Conclusion sections were drastically cut due to space constraints, please contact the author for copies of the original paper

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When Do Consumers Infer Quality from Price?

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Abstract

The conditions under which consumers use price to infer quality are examined. The generalization that brand name or point of purchase information replace price as an indicator of quality is challenged. Product line structure -- the existence of multiple quality levels under one brand name -- is found to be a predictor of price-quality effects.

Introduction

Despite the ease with which the marketplace employs the dictum, "You get what you pay for," and despite the existence of a sufficient body of academic study to justify casual references to research on the "price-quality relationship," we really don't understand the links between price and quality perceptions very well. There is no evidence of a strong relationship between *objective* quality and price (Curry, 1985; Gerstner, 1985; Riesz, 1978; Sproles, 1977), and studies of price effects on *perceived* quality have produced equivocal results and have been flawed by demand effects (Monroe and Krishnan, 1985). More recent research has turned from efforts to demonstrate general effects of price to identifying the conditions under which price is used to infer quality. Limiting conditions can be grouped into two broad categories: aspects of the individual consumer and aspects of the evaluation situation.

The likelihood of judging quality from price appears to vary across individuals. Individual variation has been shown to depend upon the strength of a price-quality schema (Peterson and Wilson 1985), the ability to detect price differences (Zeithaml 1985), the ability to detect quality differences (Lambert 1972), and the strength of prior belief in quality differences (Obermiller and Wheatley 1984). In sum, quality is most likely to be inferred from price by consumers who have developed a price-quality heuristic and who believe that price and quality differ across alternatives.

Research has also shown that consumers are more likely to rely on price information as a quality cue in situations where other cues are absent. A frequent criticism of P-Q research has been the unrealistic nature of single cue studies, but only a small number of studies have examined the effects of price in multi-cue contexts. Monroe and Krishnan (1985) meta-analyzed the six studies that simultaneously manipulated price and brand name. Their conclusion is that we have weak evidence for an interaction between price and brand name. Consumers infer high quality when both positive brand name and high price are present. The six studies are mixed, however, regarding consumers preferences for price vs. brand name information. Five of the studies found main effects of brand name, while only three found main effects of price. Monroe and Krishnan (1985) also found a store information X price interaction across studies. In a more recent study, Stokes (1985) found a brand name X price interaction but no interaction of package design and price. Several researchers have concluded that when brand name, store reputation, or physical composition information are available, consumers appear to rely on them rather than on price (Stafford and Enis, 1964; Wheatley and Chiu, 1977; Gardner, 1971). Thus, price appears to be used as a

quality cue only when other cues are absent or ambiguous.

Summary Propositions

The following propositions are proposed as descriptive of the process by which consumers use price to judge product quality. The reader may also see Zeithaml (1987) for an independent but similar set of ideas. The propositions are, perhaps, self-evident to those who have given the problem some thought; I include them in order to provide perspective for the empirical research. I make no claim that they constitute a major contribution in conceptualization or theory development.

- P1: The price-quality linkage is inferential, i.e. there is no logical necessity that higher prices indicate higher quality; nor does current empirical evidence suggest a strong objective association. Hence, we should expect to observe p-q judgments to follow the general rules of inferencing. This proposition also emphasizes the subjectivity of the process. Marketing phenomena--price, composition, brand name--have no necessary generalizable meaning; they mean whatever people expect or believe them to mean.
- P2: Consumers will judge quality from price only when they perceive an association between price and quality. Perceived covariation between price and quality may differ across people and products (c.f. Peterson and Wilson 1985), although the reasons have not been investigated well. An objective basis for such difference across products has already been noted (c.f. Riesz 1977).
- P3: Price must be known. As Zeithaml (1987) and others have noted, it is insufficient to assume that the presence of a sticker price is sufficient. Consumers may be unaware of prices despite their seeming salience, and they may differ widely in their interpretation of price magnitudes.
- P4: Consumers must believe that alternatives differ in quality. Although this is implicit in P2, it deserves special consideration. Consumers are certainly willing to believe that prices vary, since prices may be set by retailers quite independent of brand quality. If it is a given that alternatives may differ in price, consumers will perceive a p-q association only if quality is perceived to vary. Obermiller and Wheatley (1984) demonstrated that belief in quality differences, whether manipulated or measured, was a strong predictor of the effect of price on quality perceptions.

P5: Consumers will judge quality from price only to the extent that more reliable indicators of quality are not readily available. As has been noted, the effect of price on quality judgments may be mediated by product composition information, brand name, store reputation, or trial experience--all of which may be better indicators of quality. But, just as perceptions of p-q association are subject to individual and situational differences, the perception that other cues are indicators of quality may also vary across conditions. We should, therefore, expect the mediation of p-q judgments by other quality cues to vary across conditions.

The Study

The applicability of these simple propositions struck me in the course of a recent purchase situation. I was trying to select a pair of tennis shoes from a mail order catalog. Shoes were categorized by brand name. Under familiar brand names, such as Nike and Reebok, were unfamiliar model designations (Aviators, GTs, 6500, among others) with varying prices. I had hoped to judge quality on the basis of brand name, but I found that I had to use price to estimate quality within brands. Moreover, the magnitude of the effect of price cues was large. Although I estimated higher quality for Nike than Footjoy, for example, that difference was small relative to the difference between \$59 Nikes and \$20 Nikes.

Upon further observation, I discovered a host of products that exhibit what I term multi-level product line structure--more than one price (and quality) line under a single brand name. Many articles of clothing, automobiles, appliances, and food categories are merchandised with multiple brand forms under a single brand name. The distinctions among the forms may be promoted slightly (e.g. Nike Pegasus vs. Nike Vector); they may be identified only for production and sales presentation purposes (e.g. Michelin MXV, EPX, and X4A radial tires); or they may be identified only by physical composition information (e.g. Swanson's Salisbury Dinner vs. Swanson's Shrimp Dinner). *Note that multi-level product line structure differs from simple family branding. The former has a fairly explicit price and quality hierarchy; the latter does not. Although Hunt's Barbecue Sauce comes in several flavors, all under one brand name, it has a single-level product line structure. Even if different flavors have slightly different prices, the price differences reflect qualitative, not quantitative levels of quality.

Product line structure provides a natural illustration of the preceding propositions. Multi-level product line structures should encourage price-quality inferencing; single-level structures should not. Differing quality levels may be indicated by point of purchase information, but brand name will provide insufficient information about multi-level products. Unlike previous research, which has attempted to draw generalizations regarding the mediating effects of brand name or product information, a consideration of product line structure conforms to the proposition that brand name and such can only completely replace price information under certain conditions. Data were collected to test the following research hypothesis:

Brand name and POP information can act as indicators of brand quality. For single-line product structures, price will indicate quality only in the absence

of such indicators; for multi-line product structures, however, price will have independent effects on quality perceptions, even in the presence of other indicators.

Design

The study was a 2 (price) X 2 (brand name quality) X 2 (POP information) X 2 (product line structure), with 2 brands nested within product line structure, factorial design. Price, brand quality, and POP information were between subjects factors; product line structure was manipulated within subjects. Thus, subjects were presented with four products, all of which were of the same price level (high vs. low), the same brand name quality (high vs. low/unknown), and the same level of POP information (present, high quality vs. absent). The four brands represented two levels of product line structure (multiple vs. single quality lines), with two products at each level.

Independent Variables

Price: Prices were set to reflect high and low market levels. Baby shampoo was \$2.25 vs. \$1.25 (16 oz.). Tuna was \$1.59 vs. \$1.19 (6.5 oz.). Tea bags were \$1.95 vs. \$.95 (48 bags). Audio cassettes were \$2.99 vs. \$1.39 (90 minutes).

Brand name quality: Quality of brand names was determined from a pretest focus group of similar subjects. Since the brands were fictitious, high quality brand names were selected from related product categories. Unknown/low quality brand names were selected from pretest suggestions. All pretest participants agreed upon the high quality brand names, but they were less certain of the low quality names; some were unfamiliar. There was a clear consensus, however, that unknown brand names were very likely to be lower in quality. The high quality brand names were Sassoon (baby shampoo), Pioneer (audio cassettes), Campbell's (tuna), and Starbuck's (tea bags). (Starbuck's is a premium coffee brand in Seattle.) Low/unknown brands were K-Rite (shampoo), Ace (audio cassettes), Scotch Lad (tuna), and Safeway Brand (tea bags).

POP Information: The index card adjacent to the experimental brand contained one of two levels of information. In the "absent" condition, it simply identified the brand's product category--tuna, baby shampoo, etc. In the "present" condition, the information identified the product as high in quality. Attributes of high quality were identified in the pretest as follows:

baby shampoo--"gentle, rich lather, fresh scent"
audio cassette--"90-minute Type II, high bias, EQ"
tea bags--"highest quality Darjeeling"
tuna--"fancy white solid, packed in water"

Product Line Structure: Two levels of product line structure were represented--multi-line vs. single-line. A multi-line structure is defined to have two or more price lines and associated quality levels under one brand name. Single-line structures use a brand name for a single price and quality. The two multi-line products were tuna fish and audio cassettes. Tuna fish is typically available in several quality levels under the same brand name--packed in oil vs. water; chunk vs. solid; dark, white, fancy, or Albacore. Audio cassettes likewise are typically available in several forms under the same brand name--Types I-IV, including such variables as low vs. high density, chrome, ferrous, or metal coating, high bias, low noise, EQ, etc. The two single line products were tea bags and

baby shampoo. Some variations of these products exist (tea flavors and presence of caffeine; shampoo scents), but prices did not differ and forms were not presented as different quality levels. Pretest focus group interviews confirmed that the subjects population perceived these products as representative of the appropriate levels of product line structure.

Subjects

The data were collected on the campus of the University of Washington. Tables were set up in the lobby outside a student center. Volunteers were recruited from library and restaurant patrons. Two hundred and four subjects, almost entirely students, participated in and completed the study.

Procedure

Subjects were either recruited or responded to a poster designating the tables and workers as a "Marketing Research Project" with a lottery of participants for a \$25 gift certificate. After agreeing to participate, a subject was coded according to the experimental condition and assigned to the first available product table, where he was given a "Product Information Sheet," which described the product line structure and prevailing prices for that product category. The tables contained several brands of the product category and one experimental brand in a generic package (plain white labels on nondescript containers). The brand name, price, and POP information for the experimental brand were typed on an adjacent 3" x 5" card. The other brands of the product category were arranged in a semi-circle behind the experimental brand and had their original packages and were marked with their retail prices. The "background" brands were constant across experimental conditions; they were present to provide a constant reference for the experimental manipulations and to add a touch of reality to the evaluation situation. Subjects were instructed to examine the experimental brand and to evaluate it on a series of 12 rating scales. After completing the evaluation scales, subjects moved to another product table and repeated the procedure; then again for the remaining two product tables. At each table, subjects evaluated a single experimental brand. After the evaluation phase, subjects turned in their evaluation forms and completed a simulated purchase form, which required them to choose between each experimental brand and one alternative. After the simulated purchase, subjects entered their names in the lottery box and departed with thanks. Due to the nature of recruitment, subjects were not debriefed, except for the winner of the gift certificate who was contacted after data collection was completed.

Dependent Measures

Perceived Quality: Subjects rated each experimental brand on twelve 7-point bipolar adjective scales. Three of the scales were common and were intended as measures of overall quality: high-low quality, desirable-undesirable, and beneficial-harmful. Subjects also rated the products on value scales and product-specific belief scales and responded to a forced choice simulated purchase. Additional results are reported elsewhere (Obermiller, 1987).

Results

Analyses of variance were performed for each product category with price, brand name, and POP

information as independent variables and perceived quality as the dependent variable. (The three quality scales were summed to form an overall quality measure--coefficient alphas exceeded .84 for all products.) For convenience, the results are presented separately for brand name and POP information effects; for the complete anova results, see Obermiller (1987).

The research hypothesis predicts that consumers will make greater use of price as an indicator of quality in the presence of brand name or POP information for multi-line products relative to single line products. The data for brand names are illustrated in Figures 1A and 1B.

The single line products both showed price X brand name interactions (Tea: $F(1,196)=10.86$, $p<.001$; Shampoo: $F(1,196)=3.45$, $p=.065$) in which perceived quality was low for low quality brands regardless of price and low for lower priced high quality brands but high for higher priced, high quality brands. Simple main effects of price for low quality brands were non-significant for both products; simple main effects of price for high quality brand names were significant (Tea: $t(1,51)=5.91$; Shampoo: $t(1,51)=3.35$); and differences between high and low quality brand names at low price levels were non-significant. The interactions suggest that for single line products, consumers use both brand name and price information, with a low value of either sufficient to lower perceptions of quality.

The two multi-line products both showed main effects of brand name and price but no price X brand name interaction (Tuna: $F(1,109)=12.85$, $p<.001$ for price; $F(1,196)=25.96$, $p<.001$ for brand name. Cassettes: $F(1,196)=28.07$, $p<.001$ for price; $F(1,196)=20.52$, $p<.001$ for brand name.) Again, consumers appear to use both price and brand name information, but each factor had its independent effect. Even when brands were known to be high or low quality, price differences were associated with differences in perceived quality.

There were no interactions of product with either brand name or price, so products were collapsed across product line structure levels. Figure 2 illustrates the effects of price and product line structure for both high and low quality brand names.

It was hypothesized that for high quality brand names in single line products, price would have no effect because it would provide redundant information; whereas for multi-line products, price would provide additional quality information. The data for high quality brand names do not support the hypothesis. Price does have an independent effect for multi-line products ($t(1,51)=3.39$), but there is also an independent effect of price for single line products ($t(1,51)=5.0$). The data for low quality brand names, however, do support the hypothesis: a non-significant ($t(1,51)=1.25$) increase in perceived quality due to price for single-line products and a significant ($t(1,51)=3.75$) price effect for multi-line products.

The data for POP information are illustrated in Figures 3A and 3B. The effects of POP information were similar for the two single line products. For tea ($F(1,196)=4.78$, $p=.03$) and for shampoo ($F(1,196)=0.09$, $p=.003$), POP information had small main effects on perceived quality and no interaction with price. For both products there were significant main effects of price (Tea: $F(1,196)=26.31$, $p=.001$; Shampoo: $F(1,196)=7.06$, $p=.009$).

Neither multi-line product showed significant main or interactive effects of POP information (though both

effects were marginal for tuna with $p's=.11$). For both products, again, there were significant main effects of price (Tuna: $F(1,196)=12.85$, $p=.001$; Tapes: $F(1,196)=28.06$, $p=.001$).

Discussion

This study was premised on the notion that consumers infer quality from brand cues in an orderly fashion. Five propositions, based on previous research and straightforward reasoning, were developed to account for the use of price information in particular. Previous research that had examined the effects of price on perceived quality has concluded that price effects are largely eliminated by the presence of "better" indicators--brand name especially. A naturally-occurring variation along product line structure was proposed as a means of testing the orderliness of price-quality effects and identifying limiting conditions on the generalization

that brand name or other indicators mediate the price-quality relationship.

The results of the study do not entirely support the hypothesized differences between single-line and multi-line product structures. For multi-line products, price was hypothesized to supply independent information about quality. The data conform to this expectation. When products were structured such that different quality levels existed under a single brand name, subjects perceived an association between price and quality, regardless of the nature of the brand name.

The data for single-line products were not entirely as hypothesized. Subjects were expected to judge quality from brand name and ignore price since only one quality level existed for each brand. When brand names connoted low or unknown quality, price differences had no effect, as expected. When brand name quality was high, however, price had a significant independent effect.

Figure 1A
Perceived Quality of Single Line Products by Price and Brand Name

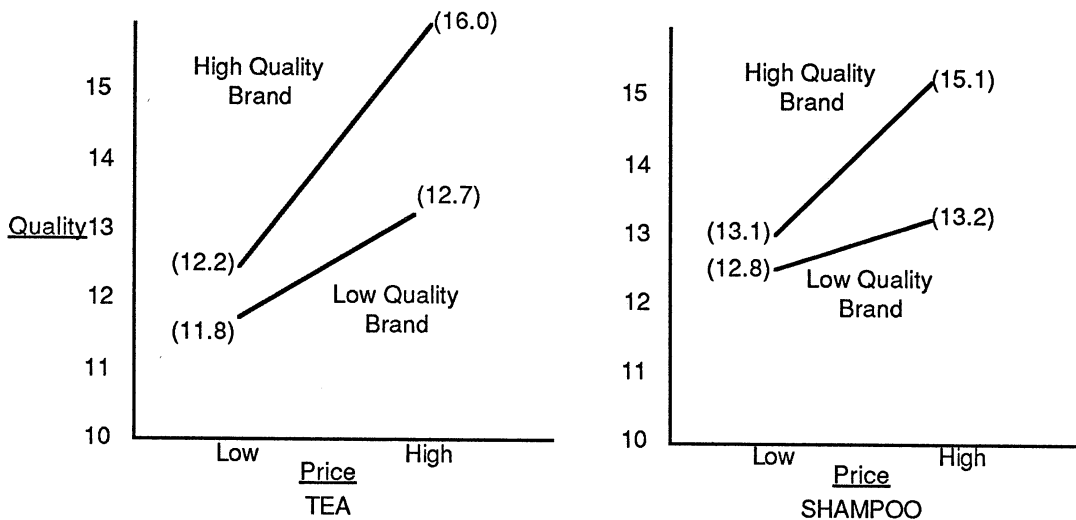


Figure 1B
Perceived Quality of Multi-Line Products by Price and Brand Name

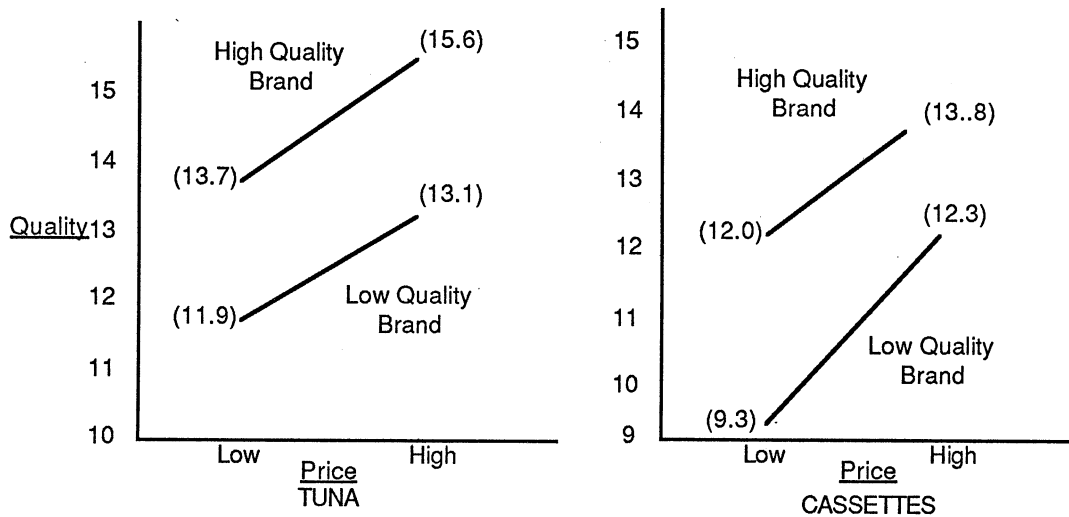
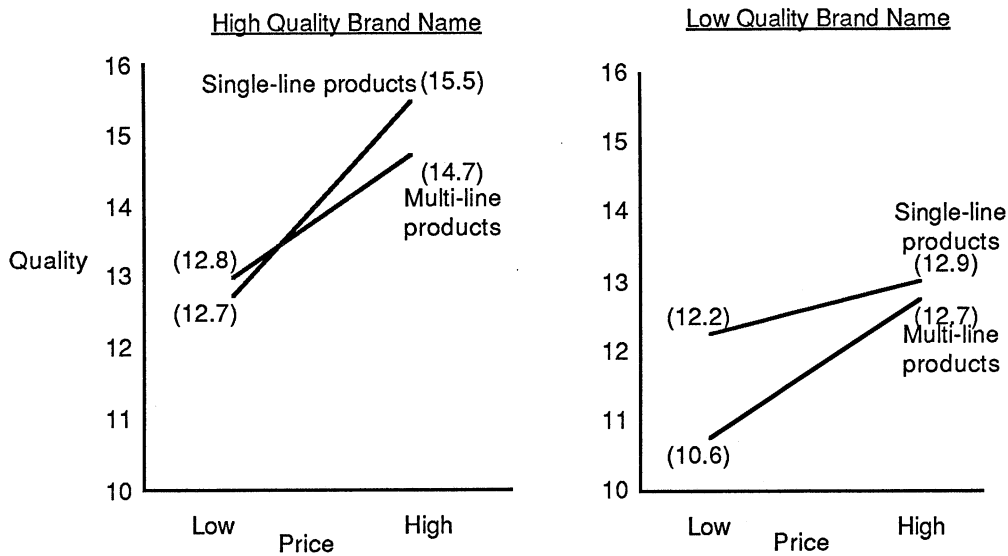


Figure 2
Perceived Quality of High and Low Quality Brand Names by Price and Product Line Structure



Two explanations might be offered for the surprising results. First, tea and shampoo may not represent the single-line product structure construct. (It was, in fact, discovered, shortly after the experiment that Starbucks had begun marketing several price points of tea bags; the subject population, however, indicated little awareness of the change.) Three things argue against this invalid construct explanation: (1) Product line structure was reinforced in the "Product Information Sheets". (2) The results of low quality brand names for tea and shampoo were as predicted. (3) The convergence of results for tea and shampoo argues against idiosyncratic departures from construct validity.

A second explanation is, perhaps, theoretical rather than methodological. Although the data clearly confirm the relative valences of the brand names, subjects may have been more certain of the information inherent in the low quality versus the high quality brand names. Safeway Tea and K-Rite Shampoo (both store-brand names) may be clear, certain indicators of lower quality, rendering price an irrelevant cue. Sassoon Shampoo and Starbucks Tea, while relatively more positive, may send less certain signals; in which case, subjects may have relied on price as a confirming cue.

The suggestion that the valence of brand name reputation may be independent of the certainty or confidence of that judgment is not an entirely new idea. Olson and Jacoby (1972) suggested that all cues to product quality have both "predictive" and "confidence" values. Most research, however, has ignored the probability that, although price, brand name, even package information may predict quality, consumers may have little confidence in such predictions. It is arguable that the student subjects in this study were less expert shoppers of tea and shampoo and, therefore, less confident in the meanings of Sassoon and Starbucks relative to the more general brand names, Safeway Brand and K-Rite. Future research on the effect of brand names may need measures of confidence in brand reputation or

some control on the expertise of subjects across brand name conditions.

The effects of point of purchase quality information in this study are perplexing. It is not surprising that POP information had only small effects; they were, at least, all in the expected direction. What is confusing is that price had relatively large effects, even in the presence of the same information that price differences might imply. The price difference reflected the market range associated with the quality difference identified in the POP information (The price difference in the two tunas, for example, corresponded with the difference in prices of fancy white tuna in water vs. dark tuna in oil.). Yet, across the four products the average POP effect is less than half the size of the average price effect (.95 vs. 2.0). It is possible that the procedure made price information more salient than POP information. Although one could read the package information on the reference brands, it was much easier to note their prices. While the difference in availability of price vs. package information reflects the marketplace, subjects may have been less apt to compare the more detailed information in the experimental procedure. Another explanation is that, despite the pretesting to identify important attributes, POP information reflected only part of the quality information implied by price.

This study has added to our understanding of the price-quality relationship by identifying product line structure as a variable that may make price meaningful. So long as marketers offer multiple levels of quality under a single brand name, they invite consumers to rely on price information, even though brand or POP information may be available. The strong price effects for single-line products, despite the presence of other indicators of quality, suggest the need for more work. If we are to make progress in understanding the meaning of price to consumers, we must simultaneously investigate the meanings of brand name, package information, and other product cues.

Figure 3A
Perceived Quality of Single Line Products
by Price and POP Information

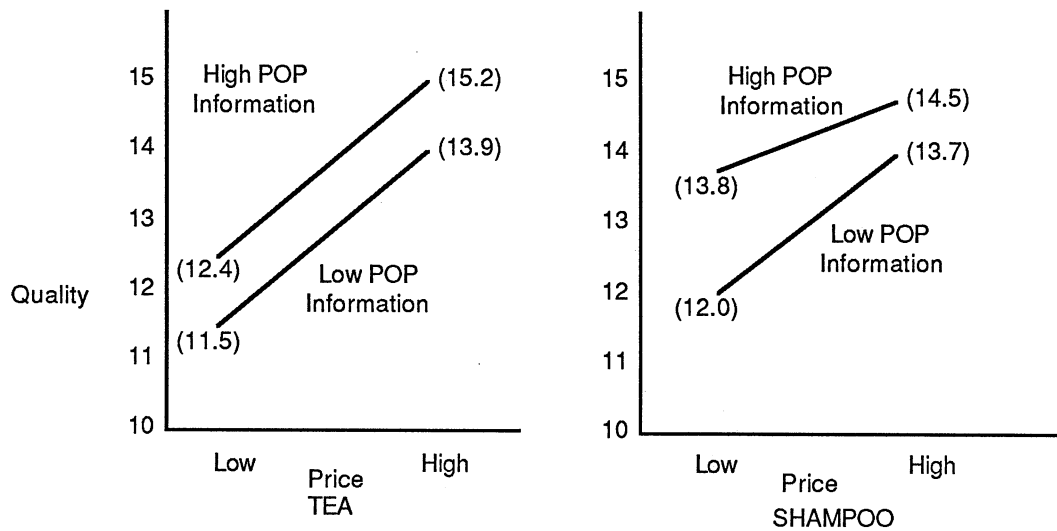
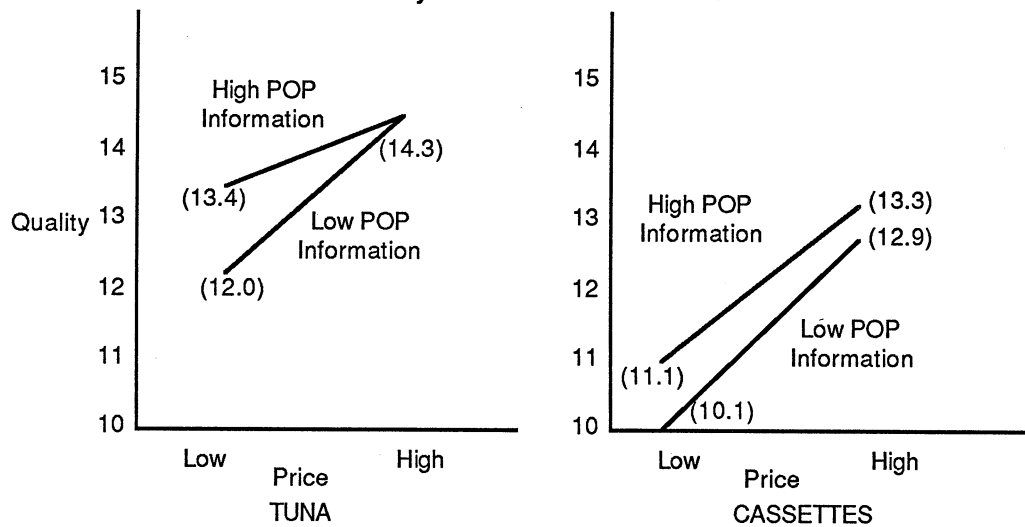


Figure 3B
Perceived Quality of Multi-line Products
by Price and POP Information



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The "Value for Price" Concept: Relationships to Consumer Satisfaction

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Abstract

A national telephone survey of 604 consumers was conducted to assess satisfaction with the "value for price" of apparel brand types, store types, and brand types in association with store types. Utilizing a congruity theory approach, results revealed that consumer satisfaction with the value for price of name brands is significantly lowered when associated with certain store types, satisfaction with the value for price of store types is significantly lowered by association with designer brands, and that satisfaction with the value for price of store brands is significantly lowered when associated with certain store types. Implications for manufacturers, retailers, and consumer behavior researchers are discussed.

Introduction

Consumers today are confronted with a variety of store types from which they can purchase similar or identical products. Some of these stores place an emphasis on price, while others tend to emphasize service. Brand types are proliferating as well. Department stores which at one time carried mainly name brand and designer goods are now increasing their commitment to private and store brands. Off-price stores carry name and designer brand goods, and in fact advertise their ability to offer such goods at "below department store prices." How satisfied are consumers with the value for price which these products offer? More importantly, does the consumer's perception of a product's "value for price" change depending upon in which store it is placed? This study attempts to understand the interactive effect of placing various brands in various store types. Engel and Blackwell (1982) have defined physical product attributes and subjective factors that consumers consider to be important in the purchase decision as "evaluative criteria." The evaluative criterion, price, has been studied frequently in relationship to quality (Monroe 1973, 1976; Shapiro 1973). The evaluative criterion "value for price" has been studied less often, although Rodgers and Sweeney (1979) did find a relationship between the perception of "value for your money" and store type.

Satisfaction, according to Andrews and Withey (1976), is an enduring global attitude. Consumer satisfaction can be defined as a feeling of parity between what is expected in products and services and how products and services perform. Czepiel and Rosenberg (1976) conceptualize satisfaction as a singular response representing a summary of subjective responses to many different facets. Prior to 1970, relatively few research studies were done on consumer satisfaction. In response to the consumer movement, the 1970s saw more research on the topic. Much of this research was focused on repeat purchase behavior (Jacoby and Chestnut 1978; Newman and Werbel 1973) and complaint behavior (Kraft 1977; Swan and Longman 1973; Zaichkowsky and Liefeld 1977). Consumer satisfaction theories (Day 1977; Day and Landon 1977; Miller 1976; Oliver 1980) and measures (Handy 1977; Lingoos and Pfaff 1973; Swan and Combs 1976) were developed.

A congruity theory approach (Osgood, Suci, and Tannenbaum 1957) is utilized in the present study which attempts to measure how satisfied consumers are with brand types *in association with* store types. Congruity theory is a form of consistency theory which states that when individuals experience inconsistency, tensions arise which force restoration to consistency. The basic premise of congruity theory is that humans abhor inconsistency. Jacoby and Mazursky (1984, 1985) utilized congruity theory to link brand and retailer images to perception of quality. The present study extends the work of Jacoby and Mazursky by linking store types (rather than individual stores) with brand types (rather than individual brands) in relationship to consumer satisfaction with the value for price concept. The hypothesis for the study was that consumer satisfaction with the value for price of brand types independent from store type would differ significantly from satisfaction with brand types *in association with* store types.

Method

Subjects

A national sample of 952 individuals who met the criterion of being the person who did most of the household shopping for apparel was drawn on the basis of a systematic probability sample of households in the United States. Random digit dialing was used to eliminate selection bias of listed over unlisted numbers. Statistically this sample provided data at the 95% level of confidence within a maximum sampling error of 3.5%. There were 604 interviews (64% response rate) obtained. All fifty states plus the District of Columbia were represented in the sample. Eighteen percent of the sample was drawn from the Northeast (compared to a population of 21%), 32% from the Midwest (compared to a population of 25%), 34% from the South (compared to a population of 34%), and 16% from the West (compared to a population of 20%). Approximately 18.4% of the sample resided in rural areas.

Respondents in the sample had a median age of 40 years (compared to a national median of 32 years based on the *Statistical Abstracts of the U.S.*), with a median of 12.5 years of schooling. About 52% of the subjects had a high school education and 39% had some college education. Males made up 24% of the sample. Sixty-three percent of the respondents were employed (compared to a national norm of 60%). Fourteen percent of the sample was retired. Married respondents made up 63% of the sample (compared to 63% nationally), whites 83%, blacks 10%, and median household income averaged \$27,260 (compared to a national median of \$26,433).

Measures

Variables in the study consisted of satisfaction with the value for price of apparel store types and brand types. Satisfaction with the value for price of apparel was measured on a four-point Likert scale (very satisfied, somewhat satisfied, somewhat dissatisfied, and very dissatisfied). Consumers were asked to describe how satisfied they were with the value for price of apparel

sold in four different store types. The store types consisted of department stores "like Macy's or Marshall Field's," discount stores "like K-mart or Zayre," national chain stores "like J. C. Penney's," and off-price stores "like Loehmann's, Marshall's, or T. J. Maxx." Satisfaction was assessed with store types individually and also in association with each of three brand types (name, designer, and store brands). For example, respondents were asked how satisfied they were with the value for price of apparel sold in department stores like Macy's or Marshall Field's. They were also asked to assess the value for price of name brand apparel sold in department stores.

This method of measurement whereby consumers rated store types separately and then in association with different brand types allowed for an assessment of the adjustments that consumers were willing to make when their satisfaction with the value for price of a store type varied considerably from that of the brand type. Thus, a measurement of how congruity was established between store types and brand types was possible. Brand types consisted of name brands, designer brands, and store brands. Name brands were defined to the respondents as "well-known recognized brands that many stores carry," designer brands as "brands named after a well-known designer," and store brands as "brands that have a label with the store's name on it." Similar to the measurement of store types, all brand types were measured separately and in association with the four different store types. The inclusion of off-price stores in this study was seen as particularly important, since off-price apparel stores are rapidly expanding and are a fairly new form of retail institutional type. The inclusion of store brands was also seen as significant because many apparel retailers (especially department stores) are expanding the percentage of store brands that they carry.

Data Collection and Analysis

A pretest consisting of 24 telephone interviews was conducted by professional telephone interviewers. Questionnaire revisions and an estimate of the average time required to administer the interview schedule resulted. Following the pretest, 604 telephone interviews were obtained by trained professional interviewers. The questionnaire consisted of approximately 118 questions. All interviews were conducted in the evening during the week and during the day on the weekend in order to facilitate contact with persons holding jobs. Up to ten attempts were made to conduct an interview at a given telephone number before it was considered a noncontact. At least 10% of the completed interviews of every interviewer were verified by telephone, either by the supervisors or by interviewers specifically trained for this purpose. Bonferroni t-tests were used to compare mean differences between brand types and brand types in association with different store types. Bonferroni t-tests were also used to compare store types in association with different brand types.

Results

Based on the mean scores as presented in Table 1, consumers were most satisfied with the value for price of name brands and least satisfied with designer brands. Among store types, consumers were most satisfied with the value for price presented at department stores and least satisfied with off-price stores. In relationship to different types of brands found in stores, consumers were

most satisfied with store brands within department stores, name brands within discount stores, name brands within national chain stores, and name brands within off-price stores. Across store types, consumers were least satisfied with the value for price of designer brands. Consumers were significantly ($p = .000$) less satisfied with designer brands than either store or name brands. They were also significantly ($p = .000$) less satisfied with discount rather than department stores, off-price rather than department stores, discount rather than national chain stores, and off-price rather than national chain stores.

Results of the paired t-tests between name brands and store types (Table 2) indicated that satisfaction with the value for price of name brands was significantly¹ lowered when name brands were sold in discount stores, national chain stores, and off-price stores. Satisfaction with name brands was not significantly lowered when associated with department stores.

In relationship to designer brands, a clear pattern of consumer dissatisfaction emerged (Table 3). Across the four store types of department store, discount store, chain store, and off-price store, consumers' satisfaction with value for price was significantly lowered by a store's association with designer brands. Chain stores were most hurt by the association with designer brands while off-price and discount stores were least hurt by the association with designer brands.

Table 1
Means and Rankings for all Variables on Satisfaction with Value for Price

Variable	Mean	Rank
Name brand	2.09	1
Department store	2.10	2
Chain store	2.11	3
Store brand/department store	2.11	3
Store brand	2.14	5
Name brand/department store	2.16	6
Name brand/chain store	2.20	7
Store brand/chain store	2.24	8
Discount store	2.25	9
Name brand/discount store	2.26	10
Store brand/discount store	2.30	11
Off-price store	2.31	12
Name brand/off-price store	2.31	12
Store brand/off-price store	2.35	14
Designer brand/chain store	2.47	15
Designer brand/discount store	2.48	16
Designer brand/department store	2.50	17
Designer brand	2.52	18
Designer brand/off-price store	2.52	18

Note: A mean of 1 equals very satisfied with the value for price and a mean of 4 equals very dissatisfied with the value for price.

¹Similar to the method used by Jacob and Mazursky (1984), a more stringent test, the Bonferroni t-test (Alt 1982), was applied to correct for the possibility of spuriously biased results due to the use of multiple t-test runs applied to the same population. The Bonferroni test requires the t-value to be significant at the alpha level divided by the number of comparisons (which in the present study is $.05/2$) rather than the conventional .05 level to satisfy statistical confidence.

Table 2
Paired T-Tests Between Name Brands and Store Types

Variable	Mean	T value	Degrees of freedom	Probability level
Department store	2.10	1.63	493	.103
Name brand department store	2.16			
Name brand department store	2.15	2.17	498	.030
Name brand	2.09			
Discount store	2.25	.39	510	.699
Name brand discount store	2.26			
Name brand discount store	2.26	4.02	512	.000*
Name brand	2.12			
Chain store	2.10	3.20	530	.001*
Name brand chain store	2.20			
Name brand chain store	2.19	2.85	537	.005*
Name brand	2.10			
Off-price store	2.31	0	414	1.000
Name brand off-price store	2.31			
Name brand off-price store	2.31	4.71	421	.000*
Name brand	2.10			

Note: A mean of 1 equals very satisfied with the value for price and a mean of 4 equals very dissatisfied with the value for price. Means on the same variable may be slightly different due to variations in the number of subjects responding to a particular question. All subjects were not familiar with all store and brand types. These variations are reflected in the degrees of freedom.

*Significance level equal to .05/2 or less (.025) based on Bonferroni t-test.

Table 3
Paired T-Tests Between Designer Brands and Store Types

Variable	Mean	T value	Degrees of freedom	Probability level
Department store	2.12	8.39	460	.000*
Designer brand department store	2.49			
Designer brand department store	2.50	1.39	462	.165
Designer brand	2.53			
Discount store	2.27	4.81	465	.000*
Designer brand discount store	2.48			
Designer brand discount store	2.49	1.33	464	.184
Designer brand	2.54			
Chain store	2.13	8.80	487	.000*
Designer brand chain store	2.48			
Designer brand chain store	2.47	1.56	485	.119
Designer brand	2.53			
Off-price store	2.31	4.56	387	.000*
Designer brand off-price store	2.56			
Designer brand off-price store	2.52	.63	389	.530
Designer brand	2.55			

Note: A mean of 1 equals very satisfied with the value for price and a mean of 4 equals very dissatisfied with the value for price. Means on the same variable may be slightly different due to variations in the number of subjects responding to a particular question. All subjects were not familiar with all store and brand types. These variations are reflected in the degrees of freedom.

*Significance level equal to .05/2 or less (.025) based on Bonferroni t-test.

Results of the paired t-tests between store brands and store types (Table 4) revealed a pattern similar to that for name brands. Satisfaction with the value for price of store brands was significantly lowered when associated with discount stores, national chain stores, and off-price stores. Satisfaction with store brands was not significantly lowered when associated with department stores.

Discussion

According to the findings in the present study, name brand apparel represents good value for the price to

the American consumer. However, when name brand apparel is associated with discount stores, national chain stores, or off-price stores, feelings of satisfaction with the value for price are significantly lowered. Consumers obviously are allowing their satisfaction with the store type to dominate their feelings of satisfaction when name brands are in association with store types. The only exception is that of name brands in department stores. Manufacturers of name brands should recognize that the placement of their brands in discount stores, national chain stores, and off-price stores does significantly lower the feeling of satisfaction that

Table 4
Paired T-Tests Between Store Brands and Store Types

Variable	Mean	T value	Degrees of freedom	Probability level
Department store	2.08	.70	488	.482
Store brand department store	2.11			
Store brand department store	2.11	1.02	487	.307
Store brand	2.13			
Discount store	2.24	1.45	503	.148
Store brand discount store	2.29			
Store brand discount store	2.29	5.02	500	.000*
Store brand	2.15			
Chain store	2.10	4.51	521	.000*
Store brand chain store	2.23			
Store brand chain store	2.23	3.20	521	.001*
Store brand	2.15			
Off-price store	2.30	1.66	408	.097
Store brand off-price store	2.36			
Store brand off-price store	2.35	4.98	409	.000*
Store brand	2.17			

Note: A mean of 1 equals very satisfied with the value for price and a mean of 4 equals very dissatisfied with the value for price. Means on the same variable may be slightly different due to variations in the number of subjects responding to a particular question. All subjects were not familiar with all store and brand types. These variations are reflected in the degrees of freedom.

*Significance level equal to .05/2 or less (.025) based on Bonferroni t-test.

consumers have about the value for price that these products represent. Manufacturers should also recognize that the image of the name brand is not significantly hurt by its association with the department store.

Findings from this study would suggest that name brand manufacturers should try to increase their offerings in department stores. This may be particularly difficult because many department stores are shifting a higher percentage of their stocks into private brands and store brands rather than name brands. Reasons why this is occurring focus on the apparel retailers' ability to obtain higher gross margins on private label and store label merchandise and opportunities for exclusiveness. Future studies should attempt to assess *why* consumers are less satisfied with the value for price of name brands in discount, national chain, and off-price stores. Since these stores usually offer merchandise at lower prices than the department store, one could have expected the consumer to be *more* satisfied with the value for price at these stores. Perhaps consumers do not perceive the name brand prices to be significantly lower at discount, national chain, or off-price stores and, therefore, the value for the price is simply not there.

Another dilemma to be faced by domestic name brand apparel manufacturers is in relationship to the current apparel import situation. Many department and specialty stores have shifted their assortments into private and store brands which are frequently manufactured outside the United States. This has left the domestic name brand apparel manufacturer without a retailer to sell to, or at least fewer retailers to sell to. The option which many U.S. apparel manufacturers have chosen is to sell to discount, national chain, and off-price stores to make up for the business previously provided by the department store. Thus, the U.S. name brand manufacturer must decide to what extent it is beneficial in the long run to continue to sell to discount stores, national chain stores, and off-price stores. The findings from this study certainly pose a word of caution

to domestic name brand manufacturers in terms of consumer satisfaction.

In relationship to the findings concerning designer brands, a clear pattern of consumer dissatisfaction with the value for price of designer brands emerged. Thus, in this instance, retail stores need to be particularly careful about the inclusion of designer brands in their assortments. This is especially true for national chain stores and department stores. Although stores may choose to carry designer brands for reasons other than the perception of good value, the fact that designer brands consistently lowered consumers' satisfaction across store types cannot be ignored. National chain stores like J. C. Penney, which have added such designer brands as Halston III, need to be cognizant of the fact that these brands might represent poor value to their customers. Balancing a retailer's image between "fashion" and "value" is certainly not an easy task. However, retailers such as J. C. Penney should recognize that what may be gained in terms of a "fashion" image may be lost in terms of a "value" image.

The findings in relationship to store brands revealed that consumers are most satisfied with the value for price of store brands when placed in department stores. Thus, similar to the relationship between store types and name brands, store brands are heavily influenced by the association with a store type. Future studies should attempt to assess consumer satisfaction with other evaluative criteria such as fashionableness in relationship to store brands.

This study revealed that consumers are satisfied or dissatisfied with the value for price of "categories" or "types" of stores and brands. Jacoby and Mazursky (1984, 1985) demonstrated the usefulness of applying congruity theory to the study of specific store and brand images. The present study further demonstrates the usefulness of using congruity theory in relationship to consumer response to *categories* of retail stores and brands. Consumer behavior research would be furthered by the extension of this study to include other product

categories, those both more or less durable than apparel. This might include products such as food, automobiles, or stereos. Low involvement products such as toothpaste might also be studied.

The "value for price" concept warrants further research as well. Apparently "value for price" in the consumer's mind extends beyond the specific attributes of the product and the product price. Subjects in the present study were less satisfied with the value for price of name brands in discount, national chains, and off-price stores even though name brands in these stores are frequently offered for less than the department store's price. Value in the consumer's mind may include additional factors such as liberal return policies and store services. National chains, off-pricers, and discounters should communicate these "value symbols" to the consumer whenever and wherever possible.

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An Exploratory Study of Price/Perceived-Quality Relationships Among Consumer Services

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Abstract

This paper reports two studies which were designed to extend price/perceived-quality research into the realm of consumer services. Based on theory and previous empirical findings from the tangible product context, several hypotheses were generated and tested. Findings indicate that the extent of belief in positive price-quality relationships varies across service types. Furthermore, prior familiarity, expectations of quality variance and demographic characteristics all influence consumers' perceptions of price-quality associations among services.

Introduction

Price may be said to have both attracting and repelling characteristics (Monroe 1979). While traditional demand theory explains the latter, economists, with few exceptions, have ignored the potential attracting power of price (Gabor and Granger 1966). Behavioral research, however, has recognized that consumers often use price as an informational input to formulate product quality perceptions. This recognition of price as a quality cue has given rise to a considerable body of research. However, in spite of the vigorous interest in the topic over the past several decades, the literature has not dealt with the price/perceived-quality phenomenon *vis-a-vis* consumer services. While previous research has focused on tangible goods, the present study extends this work into the realm of intangible services.

The investigation of price/perceived-quality relationships among consumer services is important for several reasons: (1) research in the tangible product context has produced inconclusive and contradictory findings, so more research is needed to resolve a significant controversy; (2) the service sector accounts for a large and rapidly growing proportion of consumer spending (Berry 1980), yet relatively little is known about service marketing as compared to product marketing; and (3) some sources (e.g. Gabor 1977, Eiglier and Langeard 1977) have recommended pricing strategies based on the assumption that consumers use price as an indicator of quality for services; however, it has not been empirically demonstrated that this is true.

Several distinctions characterize the present study. Unlike previous research concerning price/perceived-quality relationships, this study deals with services rather than tangible goods. This is an important and relatively unexplored area. Also, rather than investigating the phenomenon in the context of a single commodity, the present study examines a broad range of consumer services. This represents a significant extension of previous research as the question of external validity has been cited as a possible limitation of single-product studies (Olson 1977). The current approach allows comparisons to be made between service categories and affords an opportunity to draw broader, more general conclusions. A final point of distinction is the inclusion of several moderating variables in the study. Previous studies have generally included only one or two "non-price" cues. Using a survey methodology rather than an experiment allows more variables to be measured

and controlled statistically than would be practical in an experimental setting. The survey approach is believed to be appropriate during the exploratory stages of research as a prelude to subsequent experimental work.

Background and Hypotheses

Research in the Product Area

Scitovsky (1946) provided the initial conceptualization for price/perceived-quality research. He pointed out that the economic theory of price is based on the assumption that the consumer knows what he buys. This may have been a reasonable assumption at the time economic price theory was developed. Given the subsequent proliferation of new brands/products and the increase in their complexity, however, the assumption may no longer be realistic. Consumers must now judge product quality by various indices of quality such as price.

Early empirical research in the price/perceived-quality area sought to discover the *extent* to which price cues influence quality judgments. These studies may be divided into *single cue* (i.e., price only) and *multi-cue* studies.

Single cue studies examined the influence of price in isolation upon quality judgments (Leavitt 1954; Tull et al. 1964; McConnell 1968; Peterson 1970; Lambert 1970, 1972; Deering and Jacoby 1972; Shapiro 1973). Different samples, products, operations of measures and experimental designs all converged on a single result. Findings were generally positive. Price was found to be significantly related to consumers' product quality judgments. Critics have pointed out that if price is the only available cue upon which to base quality judgments, it will naturally be used. However, price is rarely the only information about a product. For this reason, some researchers have embedded price in a more naturalistic "multi-cue" setting.

Multi-cue studies have sought to assess the importance of price as an indicant of product quality in the context of multiple informational cues. This involved identifying the various cues and assessing the relative importance of each. Non-price cues which have been studied include store name (Enis and Stafford 1969), brand name (Gardner 1970, 1971; Jacoby et al. 1971), product sample (Valenzi and Andrews 1971; Cimbalo and Webdale 1973), and "ecology appeal" (Fuller 1972), among others. Findings from these studies have been somewhat inconsistent. One generalization that might be drawn, however, is that the price cue diminishes in importance as the number of other available cues increases (Rao 1970; Olson 1977).

Some research has focused on discovering the *conditions* under which price is used as a quality cue (e.g. DellaBitta 1971). Lambert (1972) studied economic and personality variables as moderating influences on price cue usage and found that emotional stability and income approached significance, but gender did not. Peterson and Wilson (1985) suggest that price cues are more important under conditions of risk or uncertainty. This implies that consumers may rely on their belief in a price-quality correlation as a perceived risk reduction strategy. The

same authors also note the moderating influence of prior experience or familiarity with a product. This implies that price is a relatively more important cue to quality for new brands/products. The extent of price cue usage also varies according to the nature of the product (i.e., convenience/shopping/specialty goods). Price cues are relatively more important among specialty and shopping goods than among convenience goods (Toh and Berard 1984). Perhaps this is due to consumers' more extensive product familiarity and experience with the latter.

The Nature of Services

Services are generally characterized as (1) more intangible than tangible, (2) simultaneously produced and consumed, and (3) less standardized than tangible goods (Berry 1980). Furthermore, services may be distinguished from tangible products by the degree to which they possess search, experience, and credence qualities. Search qualities refer to attributes that a consumer can determine prior to purchase. Experience qualities refer to attributes which can be assessed only after purchase or during use. The third category, credence qualities, refers to attributes which may be impossible for consumers to determine even after purchase and consumption. Whereas products are generally high in search qualities, services are lower in search qualities and higher in credence qualities (Zeithaml 1981).

Intangibility, simultaneous production and consumption, and a relative lack of search qualities all result in the availability of fewer cues upon which consumers can base prepurchase service quality evaluations. The lack of standardization among consumer services increases the perceived risk associated with service choice. Both availability of alternative cues and presence of perceived risk have been found to moderate the strength of belief in price-quality relationships.

Hypotheses

On the basis of theory and previous empirical findings as discussed in the foregoing sections, the following hypotheses were generated.

Previous research has found price to affect quality judgments differentially across product types/categories (e.g. Toh and Berard 1984). Further, variations in the degree of tangibility and the possession of search qualities among service types is likely to result in differentially perceived price-quality relationships. Thus it is hypothesized that:

Hypothesis 1: The *extent of belief* in positive price-quality relationships will vary across types of consumer services.

Many previous findings in the tangible product context have indicated a significant moderating influence of prior familiarity, extent of experience and expertise on the magnitude of price/perceived-quality associations (e.g. Enis and Stafford 1969; Gardner 1970). As consumers gain more experience and become more familiar with a product through repeated purchase and usage, they tend to rely less on price as an indicant of quality in forming their personal evaluations. For this reason it is expected that:

Hypothesis 2: The degree of consumers' *familiarity* with various services will be

negatively associated with the extent of their beliefs in price-quality relationships.

Breadth of range in perceived quality within a product category has also been demonstrated to have a significant moderating influence on extent of price cue usage. For example, if asked for an opinion on the statement, "the higher the price of the aspirin, the higher the quality," most consumers would disagree (Peterson and Wilson 1985). This may be because most people perceive aspirin as a generic item -- i.e., all aspirin are basically the same. If the product in the above statement were changed from aspirin to diamonds, however, consumers would be more likely to agree with the price-quality statement. This may be because consumers perceive diamonds as varying significantly in quality. For this reason, it is expected that:

Hypothesis 3: The degree of consumers' expectations of *quality variance* (i.e., breadth of range in quality within a service category) will be positively associated with extent of belief in price-quality relationships within a service category.

Some previous research has examined demographic influences on price cue usage. For example, females were found to be more price reliant than males in forming product quality judgments (Toh and Berard 1984). Age differences have also been reported, with older consumers showing a greater reliance on price as a quality cue (Shapiro 1973). Income effects are more controversial since they have been reported to be both positive (French et al. 1972; Toh and Berard 1984) and insignificant (e.g. Shapiro 1973). Based on these empirical findings, it is hypothesized that:

Hypothesis 4: (A) Female consumers will demonstrate a greater extent of belief in price-quality correlations among services than will male consumers;

(B) Older consumers will demonstrate a greater extent of belief in price-quality correlations among services than will younger consumers;

(C) Consumers in higher income categories will demonstrate a greater extent of belief in price-quality correlations among services than will consumers in lower income categories.

Study I

The purpose of Study I was twofold: to test Hypothesis 1, and to facilitate the development of an instrument for future use. The study was conducted in several phases, as described below.

Method

A list of consumer services was developed by collating service items compiled from two sources: Lovelock's (1983) taxonomy of services and S.I.C. codes. Items were selected which were representative of a broad range of consumer services. Further, it was desired to include items which varied with respect to respondent

familiarity and the degree of quality variation within the product class. The final list contained fifty-three services.

The list of services was converted into questionnaire items of the form: "The higher the price of the (*service*), the better the quality of the (*outcome*)."
This operation is patterned after previous research (Peterson and Wilson 1985). Statements were then reworded into several different formats which retained the same essential meaning. For example, "The more one pays for (*a service*), the better the quality," and "A (*service provider*) who charges higher prices provides better (*service*)." Also, randomly selected items were restated negatively (i.e., "The lower the price . . ."). A questionnaire was constructed using the fifty-three price-quality statements. Printed instructions at the beginning of the instrument asked respondents to indicate the extent of their agreement/disagreement by circling the appropriate number on the five-point scales provided (5 = "I strongly agree"; 1 = "I strongly disagree"). In order to combat potential "ordering effects" one version of the instrument ordered the price-quality statements alphabetically by service, and a second version reversed the sequence of the four pages, renumbering items appropriately.

The questionnaire was administered to a sample of volunteer undergraduate business students at a large southeastern university ($n = 167$). The two versions of the instrument were randomly distributed among the subjects. This sample is deemed appropriate given that no inferences as to proportions in the population are being sought (Berkowitz and Donnerstein 1982).

Study I Analyses and Results

The first analysis performed was a check for order effects. Two groups, those who received questionnaire version one and those who received version two, were compared via a univariate t-test on each variable. The lack of an order effect would result in no differences between the groups; one would then expect the t-scores to be normally distributed with a zero mean. A chi-square goodness of fit test revealed no order effect (chi square = 4.8; $p > .1$).

In order to reveal any underlying associations among the variables, responses to the price-quality statements were factor analyzed as per Green (1978). Nine orthogonal factors were obtained. In most cases the factors were clearly interpretable by noting which services "loaded together" (factor loadings $> .5$ rounded). Based on these results, eight composite scales were formed: hospitality services, health services, professional services, real estate and home services, art and entertainment, financial services, travel services, and public utilities. The scales were purified as per Churchill (1979). Resultant reliabilities and composite scale means are reported in Table 1.

Hypothesis 1 stated the expectation that the strength of price/perceived-quality relationships would vary across types of services. Comparisons were made using ANOVA. A single repeated-measures test comparing all 53 services showed significant differences in beliefs ($F = 32.16$; $p < .001$). Further analysis compared means of the composite scales. This was also significant ($F = 103.55$; $p < .001$). Thus, Hypothesis 1 is supported, and one can conclude that the extent of belief in a price-quality relationship is dependent on the type of services being considered.

Table 1
Composite Scale Statistics

Composite Scale	# of Items	Reliability*	Scale Mean**
1. Hospitality	3	.61	3.22
2. Health Services	5	.72	2.98
3. Professional Services	5	.78	2.62
4. R.E./Home Services	6	.74	2.56
5. Arts/Entertainment	5	.66	2.35
6. Financial Services	5	.60	2.33
7. Travel Services	4	.61	2.11
8. Public Utilities	3	.58	2.03

* Cronbach's alpha coefficient of reliability

**Transformed to 5 point scales (5 = strong perceived relationship; 1 = weak perceived relationship)

The analysis of variance indicated that there are differences among types of services. Based on those results, paired comparisons were performed to determine between which types of services the differences lie. Only three out of twenty-eight service pairs were *not* significantly different (at $p < .001$). The results of the paired comparisons are presented in Table 2.

Table 2
T-Tests for Differences Among Composite Scale Means^a

	Hosp.	Health	Prof.	RE/ Home	Arts Ent.	Finan.	Travel
Hlth.	5.03*						
	(164)						
Prof.	9.71*	7.45*					
	(164)	(164)					
RE/ Home	11.62*	8.78*	1.13				
	(162)	(162)	(162)				
Arts/ Ent.	14.33*	11.06*	4.51*	3.79*			
	(164)	(164)	(164)	(162)			
Fin.	15.48*	12.90*	5.00*	5.23*	.17		
	(164)	(164)	(164)	(162)	(164)		
Trvl	15.85*	13.66*	7.76*	8.70*	4.17*	4.43*	
	(163)	(163)	(163)	(161)	(163)	(164)	
Util.	19.73*	16.36*	10.19*	10.76*	5.40*	6.46*	1.86
	(164)	(164)	(164)	(162)	(164)	(164)	(163)

^a a cell entries = t-statistics (degrees of freedom)

* $p < .001$

Study II

The second goal of Study I was to reduce the fifty-three consumer service items to a more parsimonious set for use in a subsequent study. This was done by judgementally selecting a subset of twenty items which were believed to be representative of each major group of consumer services. The items retained from Study I were used to construct an instrument for use in Study II. Study II was designed to test research Hypotheses 2, 3, and 4.

Methodology

Sample

Questionnaires were distributed to 227 volunteer undergraduate business students at a large southeastern university. The sample was comprised of 48% females and 52% males, with a racial breakdown of 80% whites, 15% blacks, and 5% other minorities. The subjects ranged in age from 19 to 52 years (mean age = 25), and

total annual household incomes ranged from less than \$7,500 annually to greater than \$60,000.

Measures

Extent of *belief* in price-quality relationships was measured on five-point agreement/disagreement scales (5 = "strongly agree"; 1 = "strongly disagree") using statements as previously described.

Degree of *familiarity* with each service was measured using five-point familiar/not familiar scales (5 = "very familiar"; 1 = "not at all familiar"). Familiarity was defined for the respondent on the questionnaire as including previous experience with or usage of a service, prepurchase investigation, and/or indirect exposure through the experience of another. It is intended as a proxy measure for experience/product knowledge/expertise.

Extent of *expected quality variance* within each service type was measured on five-point agreement/disagreement scales (5 = "I Strongly Agree"; 1 = "I Strongly Disagree").

Demographic characteristics of respondents were measured using standard methods. Variables included *age* (measured as year of birth), *gender*, and *income* (total 1986 pre-tax household income).

Results

Hypothesis 2 anticipated a negative association between strength of belief in price/perceived-quality relationships and extent of prior familiarity with the service. Partial correlations were used to test the hypothesis (controlling for perceived variability of quality within the service category). Results are presented in Table 3. If familiarity had no effect, one would expect to see positive and negative correlations randomly distributed among the twenty service items.

However, nineteen of the twenty items (95%) were in the expected direction. Use of the sign test reveals that this is significantly different from 50% at $p < .001$. Further, twelve of the individual items (60%) exhibited statistically significant associations ($p < .05$). Thus, it may be concluded that the data support Hypothesis 2.

Hypothesis 3 concerned the degree of expected quality variance within a service category, and anticipated a positive association between quality variance and extent of belief in price/perceived-quality relationships. Partial correlations were used to test the hypothesis (controlling for familiarity). Results are presented in table 3. Eighteen (90%) of the twenty associations were in the expected direction. This is significantly different from 50% at $p < .002$. Twelve of these were statistically significant at the .05 level; an additional two associations approached significance at $p < .06$. Neither of the two aberrant associations were statistically significant. Again, the findings may be interpreted as offering support for the hypothesis. While the anticipated association does not hold true in every case, extent of belief and perceived variability cannot be said to be wholly unrelated.

Hypothesis 4 anticipated certain demographic effects on extent of belief in price/perceived-quality relationships among consumer services. Specifically, gender differences were expected with respect to extent of belief in price/perceived-quality relationships. Positive associations were expected between extent of belief and both age and income. Partial correlations were used to test the hypotheses. Analyses for Hypotheses 4A, 4B, and 4C are presented in Table 3. Although there is a slight tendency for females to believe more strongly than males in price/perceived-quality relationships,

Table 3
Partial Correlations - Extent of Belief in Price-Quality Relationships with Familiarity, Perceived Variability, and Demographics

	Familiarity	Variability	Sex	Age	Income
1. Alcohol/Drug Treatment	-.16***	.12**	-.10	-.00	.01
2. Ballet	-.21****	.10*	-.02	-.11**	-.12**
3. Building Contractor	-.24****	-.09	-.01	.05	.03
4. Car Rentals	-.27****	.19***	-.01	.03	.09
5. Checking Account	-.20****	-.00	-.14**	-.04	.02
6. College Education	-.06	.20***	.02	.02	-.06
7. Electrical Utilities	-.30****	.22****	-.03	-.08	-.05
8. Home Pest Control	-.18***	.00	.05	-.17***	-.05
9. Hotel/Motel Lodging	-.02	.16***	.04	-.00	-.12**
10. Local Phone Service	-.01	.10*	.02	-.14**	-.18***
11. Long Distance Phone	-.05	.24****	-.12**	-.08	-.09
12. Major Appliance Repair	-.25****	.15**	.08	-.11**	-.01
13. Nursing Home Care	-.03	.01	-.01	.15***	-.07
14. Physician Care	-.16***	.03	-.02	-.01	.03
15. Property Insurance	.03	.15**	.06	-.08	-.05
16. Public Transportation	-.07	.03	.09	-.06	-.06
17. Real Estate Brokerage	-.24****	.16***	-.11**	-.21****	.03
18. Stock Brokerage	-.06	.16***	-.10	-.14**	-.01
19. Taxi Cabs	-.18***	.12**	-.09	-.04	-.12**
20. Theatre Admission	-.21****	.14**	-.00	.01	-.11*

**** $p < .001$

*** $p < .01$

** $p < .05$

* $p < .06$

only three significant gender differences were found. Thus, Hypothesis 4A is not supported by the data. Statistically significant associations were found in both the cases of age and income, but in neither case were the majority of the associations in the expected direction. Thus, Hypotheses 4B and 4C are not supported by the data.

Discussion

The present study affirms previous findings of price/perceived-quality relationships within the product context in the following ways. First, the findings suggest that familiarity with a service moderates the extent of belief by reducing the role of price in forming quality perceptions. Second, perceived variability in quality within a service category, on the other hand, may enhance the role of price as a cue to quality. Further investigation is needed to explore why perceived variability is important in some service categories but not in others.

Previous research was not affirmed by the findings relative to demographic effects. Gender differences found in previous studies might be explained by differences in product familiarity between the sexes. The list of services utilized in this study, however, was "sexually neutral," which may account for the findings.

Perhaps one of the most interesting results of Study II was the unanticipated age and income effects. The lower age group showed a tendency to believe more strongly in price-quality relationships than the older age group. Similarly, the lower income groups exhibited a greater tendency to believe in price-quality relationships than did the higher income groups. These findings contradict results of previous research in the product area. It might be argued that our results are explained by the older, more affluent subjects' greater opportunity to consume. This may result in greater familiarity, which is negatively associated with strength of belief in price-quality relationships. However, the association was negative even when the effect of familiarity was statistically removed. An alternative explanation for the income effect may be a greater risk-aversion among lower income consumers, leading to increased use of price cues. The age effects might be alternatively explained by the limited range of ages represented in the sample. The student sample used in the present study may be too young for direct comparison with previous literature based on adult samples. These issues are commended to future investigation.

Conclusion

The two studies reported here have extended price research into the domain of consumer services by examining price/perceived-quality relationships and selected moderating influences in a multiple service context. Findings indicate that the extent to which consumers believe in a price-quality relationship varies across service types, and that prior familiarity, degree of perceived quality variation within a service category, and demographic factors may influence the strength of this belief *vis-a-vis* certain consumer services.

However, before attempting to draw any firm conclusions from these studies, one need consider a few limitations. In addition to the usual *caveats* associated with small "student samples" and self-report measures, the following limitations are noted. First, variation in the extent of self-reported belief in a price-quality relationship suggests but does not prove the existence of

the price/perceived-quality phenomenon in the service context. While the evidence for their existence is compelling, price/perceived-quality relationships are axiomatically assumed rather than proven in these studies. Second, belief in a price-quality relationship does not necessarily imply actual price *reliance* in the context of real purchase decisions and behaviors. Both Deering and Jacoby (1972) and Szybillo and Jacoby (1974) showed "willingness to buy" to be unrelated to "perceived quality." Olshavsky (1985) points out that there is actually little evidence to support the assumption that perception of quality is always related to purchase/patronage behavior. Thus the findings of these studies may be generalized to prepurchase service evaluation, but not directly to behavioral intent or actual purchase. Third, one might question the representativeness of the specific services used in the studies (i.e., the external validity issue). Further study is needed before the results can be generalized across the entire domain of consumer services.

These limitations notwithstanding, several implications of the research may be cautiously drawn. Concerning the variation in the magnitude of price/perceived-quality relationships across service types, one may conclude that the attracting/repelling characteristic of price depends upon the nature of the service. For example, increasing a checking account service charge is not likely to result in an enhanced quality perception among prospective consumers. However, higher-priced nursing home care may be perceived differentially as a higher quality service.

The findings on familiarity effects imply that price may serve as a more important cue to service quality for (1) new services, or in (2) new markets where familiarity is limited. This finding would seem to favor skimming strategies over penetration pricing strategies given an appropriate service category. For example, this may hold true for new hospitality and health-related services, but is less likely for movie theatres, taxi cabs, etc.

Marketers may have an opportunity, in some service industries, to attenuate the repelling attribute of price and "buy" more attracting power by altering consumers' perceptions of the extent of quality variation within a service category. This might be done through promotional communication which emphasizes the differential qualities of various services or service providers within a category. Increasing the degree to which consumers expect quality variation across alternative offerings within a service type/category should have the effect of making price a more important cue to quality judgments in consumers' minds. Thus, all else being equal, consumers might be willing to pay a higher price in return for greater perceived quality.

Because of the possible moderating influence of demographic variables such as age and income, markets characterized by different demographic profiles may be targeted differentially via pricing strategy. For example, the "attracting power" of price may be stronger among younger and less affluent consumers. Therefore, high-price/high-quality services may be more likely to appeal to this group, subject to the constraint of their ability to afford the purchase.

In addition to these managerial implications, there are several implications for future research. First, conceptual and measurement issues need to be developed further. This would involve the conceptual explication of the price/perceived-quality construct, and the

development and testing of better measurement instruments. Only then can the fundamental issue of the existence of the price/perceived-quality phenomenon be addressed. Second, in order to afford stronger generalizations, the matter of grouping services should be further explored. Service type was shown in Study I to be a predictor of the strength of price/perceived-quality relationships. Underlying dimensions may explain differences in the magnitude of these relationships across service types. The specific nature of the differences underlying groups of services is an issue in need of further study. Third, future research should address the untested proposition that price cues are relatively more important in the formation of service quality judgments than in tangible product quality judgments. Fourth, extent of belief in price-quality relationships among services may serve to distinguish between different groups of consumers. Profiles of these segments should be developed using key demographic and psychographic variables in order to gain a better understanding of how different consumers respond to prices in different service categories. Finally, the price/perceived-service-quality phenomenon should be studied in relation to other outcomes of interest, such as preference formation, purchase intentions, and behaviors. The real value of studying price/perceived-quality relationships among consumer services lies in the impact of service evaluation on subsequent choice behavior.

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Involvement and the Price Cue¹

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Abstract

This study empirically investigates the weight given to the price cue by consumers in their evaluation of alternatives. Consumers who were highly involved with the product category of red wine placed less emphasis on the price cue than consumers who had low involvement with the product category. Awareness of prices or ability to recall prices was not related to level of involvement in the product class.

Introduction

The segmentation literature suggests managers expect consumers to vary on their use of the price cue in making product evaluations (Frank, Massey and Wind 1972). That is, some consumers are thought to place heavier emphasis on the price cue than other consumers. For example, Etgar and Malhotra (1981) found that anywhere from 10 to 61% of the overall product evaluation was due to the price cue. The question is, what way do the people who use the price cue only 10% in their evaluation differ from those who use it 60% in evaluation of alternatives?

Recently it has been proposed that the consumer's use of price in product evaluation is related to the level of involvement with the product class (Rothschild 1979; Engel and Blackwell 1982). It is thought that consumers who are highly involved with a product class should place less emphasis on the price cue than consumers who have low levels of involvement in the product category. This is partly because price is a readily available product attribute and perhaps requires less effort by the consumer to judge alternatives. And, although price would seem to be a universally important attribute, the importance of price might be overshadowed by other equally important attributes under high involvement. Since high involvement implies use of more complex informational cues that pertain to the physical product characteristics, some importance might be diverted from price to the importance of an intrinsic product cue. Therefore, as involvement with the product class decreases, price should become a more salient consideration. Although this is an intuitively reasonable proposition, no empirical evidence exists to substantiate the claim.

While the previous argument has merit, one might equally argue that low involved consumers will tend to purchase for convenience and be low in price consciousness and low in the importance of price as a decision variable. In other words, in the low involved case all attributes might be less important, even price. In this scenario, price would be just as unimportant as other attributes and the consumer would not be expected to be aware of price or really use that cue in their decision.

Even if highly involved individuals place less emphasis in price, this does not mean that highly involved individuals are less aware of prices than low involved individuals or even think price is less

important. The price awareness refers to the individual's ability to remember prices in the marketplace (Monroe 1979). Both groups may equally remember prices but differentially emphasize the price cue in their evaluation of the product. It is important theoretically, to investigate the distinction between the emphasis or weight given to the price cue in brand evaluation and the consumers' simple awareness of prices.

In consumer research, the assumption is made that consumers would more likely attend to information that is useful to them in making a judgement (Lynch and Srull 1982). If consumers only focus on information relevant for choice, then that information should be recalled with the best accuracy. Therefore, if low involved customers consider price unimportant in their evaluation, then that information should not be recalled with great accuracy.

It is the purpose of this study to empirically investigate if the consumers' level of involvement is related to their use of the price cue in evaluating alternatives. Specifically, do individuals who have less involvement with the product category emphasize the price cue more than those consumers who are highly involved? Secondly, are both high and low involved consumers equally aware of prices in the choice environment? The methodology used to test this premise was a conjoint design in a laboratory setting.

Method

Subjects

Subjects for this study were 22 clerical and administrative staff (21 females and 1 male) at the Graduate School of Management, UCLA. Their median education level was some college and their median age level was 34-44. These subjects were a subset of the participants in the development of a measure of involvement (Zaichkowsky 1985) who indicated they would be willing to donate further time for a future study.

Materials

The product category used as a stimulus for judgement was red wine. Reasons for selecting red wine were: a) the involvement level of red wine on the Personal Involvement Inventory (PII) shows it to be of average involvement ($m=84$) with a normal distribution of scores, therefore finding subjects with high and low levels of involvement would not be difficult; and b) there are many small private vineyards producing wine, this enabled use of real but relatively unknown brands to control for familiarity of brand name.

Several pretests were carried out to select the specific stimuli used in this study. The first step involved eliciting information from 12 adult men and women about what product attributes were important in purchasing wine. From these open-ended responses, questionnaires about purchasing wine were designed and administered to 32 men and women. The subjects indicated the importance they give to various product attributes when selecting wine in two ways; first the absolute level of attribute importance, and second, the relative attribute importance. These results are listed in Table 1. Subjects were also asked how much they usually spend for a bottle of wine for everyday consumption and, on average, they would spend \$5.00 (range \$3-\$15).

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TABLE 1
Pretest of Importance of Wine Attributes

Attribute	Absolute Importance*		Relative Importance**	
	Mean	(SD)	Mean	(SD)
Type of grape	4.53	(2.0)	17.2	(17.9)
Year of harvest	4.47	(2.0)	11.6	(13)
Brand name	4.94	(1.9)	21.4	(14.6)
County of origin	4.78	(1.9)	12.6	(9.1)
Price	4.66	(1.9)	27	(19)
Other			9	(23)
	(Total		100)	

* measured on a seven-point scale (1) extremely unimportant to (7) extremely important.

** measured by allocating 100 points among the various attributes (32 subjects were used for this analysis).

Pretest subjects were given a list of 30 brands of wine to rate on their familiarity with the brands to determine which brands of wine were relatively unknown. Based on the information derived from the pretest, the attributes year, grape and price were selected for use in a factorial design. Country of origin had to be controlled for by using all California Napa Valley wineries because one could not obtain real brands from different countries to cross with grape variety in a design. The attempt was made to control for brand name by using different brands which pretest subjects had not heard of because one could not realistically cross brand and price with grape variety or year in an orthogonal design.

A pilot study (eight subjects) was then carried out using three product attributes in a full factorial design. Two levels of price, grape and year were selected over eight relatively unknown brands from the same area. This design was unacceptable as subjects were suspicious of the investigation surrounding price since only two levels of price made the price cue very salient and unrepresentative of selections found in stores. Two levels of grape (Cabernet and Zinfandel) did not allow for enough variation on preferences and the two levels of year (1978 and 1980) were perceived to be similar and the differences between them unimportant. Based on the pilot study, only two attributes were selected, grape and price, each with three levels.

Factorial Design for Red Wine

Following Olson and Jacoby (1972), the study involved a major intrinsic product cue and price (major extrinsic cue) for counterbalancing the focus on price. Three types of grape varieties were then selected to represent the *intrinsic* cue: Cabernet Sauvignon, Merlot and Zinfandel. The *extrinsic* cue was price. Three bottles of each type of wine were priced at \$4.99, \$6.99 and \$8.99. These price levels were reflective of the actual list price for these wines and represent the price levels usually paid by the subjects.

In total, nine wines were selected. Each was a different brand from a small winery in Napa Valley. All were harvested and bottled in 1980. The labels on the bottles were mostly off-white with brown or black lettering. An attempt was made to avoid labels with any bright coloring. In addition, each bottle was of the same shape. The prices were attached to the front of the bottle above the label with small price stickers as found in retail stores. Therefore a full factorial design was used with three levels of price and three levels of grape

yielding nine choice alternatives. The attempt was made to control other major attributes by the use of unknown brands, similar labels, same shaped bottles, same year and same growing area.

Procedure

Subjects were contacted by phone and asked if they would participate in a consumer choice study. They did not know, a priori, what the study was about or that it involved red wine. These subjects were selected based on their involvement level with red wine, which was measured at an earlier time, and all had previously purchased red wine.

Individually, in a small room, each subject received the following instructions:

"All the wines you are to judge are real brands of wine. They represent a selection one may encounter in a wine store. Your task is to evaluate the wines and make a selection based on how you would normally select a bottle of wine as if you were purchasing it with no special occasion in mind. For example, to drink with dinner at home with family or casual friends."

The nine bottles of wine were arranged on a table. The subjects selected their most preferred brand, then rated the likelihood to purchase each wine on a five point scale (extremely unlikely (1) to extremely likely (5)) as well as rank ordering their purchase preference. Then the subject was instructed to move away from the wine. Evaluation questions about the importance of each attribute over all nine brands were administered as a distractor task before measuring price awareness. Price awareness was then measured. Subjects were given the nine brand names and instructed to recall the specific grape varieties and prices for each of the nine brands. The average time for completion of the whole questionnaire was 15-20 minutes.

Independent Measure - Involvement: The scale range for measuring involvement goes from 20 (low) to 140 (high) (Zaichkowsky 1985). The involvement scores for red wine for the sample ranged from a low of 20 to a high of 134, indicating some people were low involved with the product category of red wine and some subjects were highly involved with red wine. Ten subjects scored below the mean level of involvement for the product category (84) and twelve subjects scored above the mean.

Dependent Measures

Relative Emphasis of Price: The measure to test the hypothesis about relative emphasis of price was the utility weight of price derived from rating data of the factorial design. To derive this measure, the part-worth utility for each level of the two attributes (price and grape) was estimated through OLS regression analyses (Green and Wind 1975). The regression equation was

$$\text{Brand Evaluation} = B_0 + B_1D_1 + B_2D_2 + B_3D_3 + B_4D_4.$$

Brand evaluation was measured on a five point scale (1) extremely unlikely to purchase to (5) extremely likely to purchase. The dummy coding for the price and grape attributes was as follows:

Price	D1	D2	Grape	D3	D4
\$4.99	1	0	Cabernet	1	0
\$6.99	0	1	Merlot	0	1
\$8.99	0	0	Zinfandel	0	0

The importance weight for each attribute was found by first taking the largest *absolute* value of the difference among B0, B1, B2 for price and B0, B3, B4 for grape (i.e., |B0-B1|; |B2-B1|; etc.). Then the largest absolute value for each attribute was divided by the sum of the largest absolute values for the two attributes. These numbers were then given as a percent weight so the sum of the utility for price and the utility for grape is, therefore, one. This utility measure does not tell you whether a high or low price brand was the most preferred, but rather what the relative use of the price cue was in relation to the grape cue in the evaluation of the alternatives.

Awareness of Price: To measure consumers' awareness of price, subjects were given an aided recall task at the end of the study. This question consisted of listing the nine brand names and asking subjects to write the correct price and grape variety next to the brand name. To assist in the recall, subjects were given five prices to choose from: \$4.99, \$5.99, \$6.99, \$7.99 and \$8.99 and five grape varieties: Beaujolais, Cabernet Sauvignon, Merlot, Pinot Noir, and Zinfandel. (More categories were given to choose from than were used in the experiment to cut down on correct answers obtained by guessing.)

Results

As a check that the subjects were unfamiliar with the brands of wine they were asked to rate each brand on the following scale: 1) never heard of this winery before; 2) heard of this winery, but have never seen any of its wine; 3) seen wine from this winery, but have never tried it; and 4) have tried this brand before. On average, across all nine brands, the low involvement group rated the brands a 1.5 and the high involvement group rated the brands a 1.6. These results indicate the subjects had never heard of the brands or had never previously seen bottles of wine from the chosen wineries before.

As a first insight to the decisions, the subjects were asked to select one brand from the available alternatives and after they selected the brand they were asked why they selected that brand. Examples of the responses were as follows:

1. High Involvement
 - a) Subj 1: I like cabernet sauvignon. I also like trying wines from different vineyards. This particular one seems interesting. I like the label too.
 - b) Subj 3: I selected this product for its name and for its price. It would be practical for everyday use.
2. Low Involvement
 - a) Subj 4: Medium price, alcohol content.
 - b) Subj 8: I liked the label.

From these responses, subjects' references to the product attributes were classified by involvement level and shown in Table 2.

TABLE 2
Product Attributes Mentioned as Reasons for Selection

	Price	Grape	Label	Name	Other
Low Involvement (N=10)	8	1	5	1	1
High Involvement (N=12)	8	8	3	4	1

Relative Emphasis of Price: It was hypothesized individuals highly involved in a product category would place less emphasis on price than low involved individuals. To test this, the dependent measure compiled from the factorial design was the utility weight of price based on a rating of the alternatives. A total of nineteen subjects were used for this analyses, nine representing low involvement (scores < 84) and ten representing high involvement² (scores > 84). The results showed that the low involved group gave a greater weight to the price attribute in making their evaluations than the high involved group (73 vs. 44) $t(17)=3.57, p<.01$. Viewing involvement as a continuous variable, the correlation between the involvement scores and the rating utility of price was $-.47 (p<.05)$. Regression of involvement as the dependent variable and the rating as independent resulted in $F(1,18)=6.96, p<.01, R^2=.29$.

Subjects were also asked to assign 100 points among various attributes (price, grape, brand name, label and other) according to how important the attribute was in making their evaluation of the nine brands. The distribution of the 100 points among the major attributes is in Table 3.

TABLE 3
Means and Standard Deviations of Point Distribution Involvement Level

Product Attribute	Involvement Level	
	Low N=10	High N=12
Label	19 (15)	18 (14)
Brand name	5 (17)	12 (17)
Grape variety	9 (18)	26 (18)**
Price	49 (24)	30 (22)*
Other	8	14
Total Points	100	100

** $p<.05$

* $p<.1$

The results showed a difference between the two groups on grape importance $t=2.09, p<.05$ and a difference on price importance $t=1.85, p<.1$ level. These results are presented in order to give the reader a simple measure of the importance of the price and grape cue as reported overtly by the subjects. These self-

² Three subjects were deleted from this analyses: one high involved (104) due to missing data; one high involved (134) and one low involved (20) due to inability to compute utility weights from rating data. The high involved individual rated each brand a five, extremely likely to purchase, while the low involved individual rated each brand one, extremely unlikely to purchase. Since there was no variation in this data, one could not infer any part-worth utility measure for each attribute.

reports are reflective of the actual weighting of the attributes derived from the part-worth utility measures.

Therefore, the results suggest the low involved individuals placed more emphasis on price in their evaluation of the alternatives than the high involved individuals. In other words, as involvement goes up relative weight given to the price cue goes down in evaluating alternatives for probability of purchase.

Price Awareness

It was hypothesized that both low and high involved individuals would recall the same number of price cues but the high involved individuals would correctly recall more grape cues than low involved subjects due to the intrinsic nature of the attribute. The recall measure was the number of price and grape cues correctly matched to the nine brand names. Therefore the maximum number of each type of cue possibly recalled was nine. The results of the aided recall are in Table 4³.

TABLE 4
Number of Price and Grape Cues Recalled: Means and Standard Deviations

		Price Cues	Grape Cues
Personal Involvement Inventory Scores	Low (N=9)	5.00 (1.9)	2.44 (2.3)
	High (N=11)	4.82 (1.7)	4.55 (2.0)

Individuals scoring relatively high in involvement with red wine recalled about the same amount of price cues than individuals scoring relatively low on involvement (4.82 vs. 5.00) ($t(18)=.22$, not significant). Analysis of the number of correctly recalled grape varieties showed the high involvement group recalling more cues ($m=4.55$) than the low involvement group ($m=2.44$), $t(18)=2.2$, $p<.05$. Therefore, based on the results of these analyses, the conclusion is *both* high and low involved subjects pay attention to and therefore remember the price cue, but only high involved subjects remember the intrinsic cue of grape.

These results suggest there is no difference in price awareness between high and low involved individuals as both groups recalled equal number of price cues. It is comforting to note the consistency in results between the first and second hypotheses. For the high involvement group there was no difference in type of information recalled, price ($m=4.82$) or grape ($m=4.55$), and there was no difference given to the emphasis of that information in rating the available alternatives (44 vs. 56). For the low involvement group we observed a difference in the recall of the information, price = 5.00 and grape = 2.44 cues, and a difference in the emphasis given to that information in evaluating the alternatives, price = 73 and grape = 27.

A Test of Alternative Variables

Questions designed to measure expertise with wines (Reizenstein and Barnaby, 1980) were administered to the subjects as a possible covariate to the effect of

involvement. No relationship was found between expertise and involvement ($r=-.08$). However, this may be due to the low range of responses on this test. It does not seem to be a reliable tool for measuring knowledge of wine to average consumers.

The demographic characteristic of education was found to be significantly related to recall of the price cue ($F=6.63$, $p<.01$) but not recall of the grape cue. Those subjects with a higher educational level were more accurate in their recall of prices but not grape varieties. No data was collected on family income levels, therefore its effect on price emphasis could not be determined.

Summary and Conclusions

This study empirically supports what other researchers have proposed, namely that the weight given to the price cue is related to the level of involvement the consumer has for the product (e.g., Rothschild 1979). The results of this study are very consistent and, as one reviewer suggested, this consistency can be illustrated even more by converting the t statistics to r effect sizes using $r^2=t^2/[t^2+(N-2)]$ (Harris 1975). Using this formula, the effects are large and more dramatic than the significance tests suggest. For example, the difference in weight given to the price attribute by the two groups, $t(17)=3.57$, translates to R^2 of .43. However this study also shows that price awareness is unrelated to the consumers' level of involvement with a product category. Therefore recall may not be a good measure of importance. It may be that when we ask consumers if price is important they will all say yes. In addition to price, however, highly involved individuals might emphasize other attributes they consider important in evaluating alternatives. In this modest study of only two product attributes, high involved individuals were found to consider grape varieties in addition to price. Other studies need to be carried out which consider more than two attributes to see if high involved individuals consider, on average, more attributes than those low involved. When more product attributes are considered, the weight given to price may certainly change.

It is equally important to mention that this study was not designed to measure the price sensitivity or price consciousness of consumers. Another study should be designed to measure price elasticities rather than utility weights in order to investigate if involvement is related to sensitivity to price differences.

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Buyer Market Price Knowledge Influence on Acceptable Price Range and Price Limits

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ABSTRACT

This study examines the effect of consumer market price knowledge on their acceptable price limits and acceptable price range. The results indicate that price limits are strongly affected by the degree of market price knowledge possessed by the consumer. Subjects indicated a higher mean lower and upper price limit, and a narrower acceptable price range when they were market price knowledgeable than when they possessed little or no market price knowledge. Moreover, the addition of market price information reduced variability only in the upper price limit, but not the lower price limit. These findings suggest that consumer limits are shifted or shaped by the prices they are exposed to at points-of purchase or through their informational search activities.

INTRODUCTION

The idea that consumers possess a range of acceptable prices which is bounded by a lower and upper price limit (threshold) they are willing to pay for a contemplated product purchase has been analytically derived from Psychophysics (Monroe 1971) and theoretically derived from Social Judgment theory (Sherif 1963; Monroe 1971; Monroe and Venkatsen 1969; Raju 1977).

The lower price limit is defined as the lowest price (usually above 0) a consumer would be willing to pay for a product. The rationale for the lower limit is based on buyer suspicion of "too good of a deal" and the feeling that "you get what you pay for" (Stoetzel 1970; Adam 1958; Foulhe 1970; Gabor and Granger 1966). The upper limit is defined as the highest price a buyer is willing to pay for a contemplated purchase. Consumers are considered as rationalizing that at a certain high price, quality is no longer differentiated and that no product can be worth more than this certain high price (Stoetzel 1970; Gabor and Granger 1966, 1970). Therefore, consumers should have a range of prices that they are willing to pay for a product bounded by a lower and upper price limit.

Despite the fact that price information is one informational source always available to a consumer (at least in terms of point-of-purchase information), this potentially influential factor remains relatively unexplored. Raju (1977) underscores the importance of acceptable price range research by claiming that a systematic investigation of acceptable price range is particularly important because price perceptions and evaluations within unacceptable and acceptable low and high ranges may have different effects on consumer purchase intentions.

Cox (1986) astutely contends that buyers may not bring rigidly formed price limits (acceptable price range) into a purchase situation, but that the acceptable price range is to some extent "shaped or shifted" by the prices that the consumer finds when s(he) becomes a potential buyer. This may have a pronounced effect on consumer willingness-to-buy at specific product price offerings.

The purpose of this paper is to test the hypothesis that consumer price limits and acceptable price range are determined to some extent by the degree

of market price knowledge that the consumer possesses and that this factor may reduce variability in the price limits.

LITERATURE REVIEW AND HYPOTHESES

Theory

Perception is considered to be subject to thresholds of awareness. From psychophysics, researchers have found that there are absolute upper and lower boundaries to human perceptual and sensory capabilities (Corso 1963; Monroe 1973). From this perspective, absolute price thresholds (limits) and, concomitantly, acceptable price range are viewed as limits of responsiveness to extreme price stimuli in much the same way as sensory limits of responsiveness to extreme sensory stimuli (Monroe 1973). Translating this phenomenon into consumer interpretation of price, then a priori there should be upper and lower price thresholds (limits). That is, a product priced below or above these thresholds would be less likely to produce a willingness to buy response since certain prices will not be perceived. As a result, this leads to the hypothesis that consumers do not enter a purchase situation with one acceptable price they are willing to pay for a product, but with a range of acceptable prices (Monroe and Petrosius 1981).

The acceptable price range hypothesis can be derived from Social judgment theory. Latitudes of acceptance and rejection, and noncommitment are concepts central to assessing shift in individual judgments of stimuli (Sherif and Hovland 1961; Sherif et al. 1965). In the context of pricing (judgments of price stimuli), latitude of acceptance would constitute an acceptable price range, latitude of rejection would translate as an unacceptable price range, and latitude of noncommitment would be a range of neither acceptable nor unacceptable prices. The key is that the regions are derived from a judgment process that combines an evaluation and comparison of all the objects (prices) in the stimulus set (Sherif et al. 1965). By price judgment is meant the individual's assessment of whether a price is too low (unacceptable low), just right (acceptable), or too high (unacceptable high) in terms of willingness to buy at any given price. Governing the width of the latitudes is individual involvement in the stimulus.

Studies have shown that the greater the involvement in an object (e.g., a product purchase, price), the narrower the latitude of acceptance (Sherif et al. 1965; Sherif and Hovland 1961). In pricing terms then, the width of the acceptable price latitude or range should be governed by individual product involvement or product familiarity (e.g., purchase experience, brand knowledge, price knowledge, etc.) Therefore, individuals with higher product familiarity in terms of market price knowledge, etc. are likely to be more discriminating and would be expected to have narrower acceptable price ranges. This effect would be expected from Social judgment theory because greater product familiarity would mean greater involvement with the product, thereby causing a narrower acceptable price range.

The logical process would entail a price assessment or judgment in terms of purchase intention.

The lower price limit implies "poor value" for the money and poor value implies "don't buy." The same logical inference can be made for the upper price limit. A high price implies "too expensive" and too expensive implies "poor value" for the money and poor value implies "don't buy." However, it would seem to be logical to assume that what is perceived as "poor value" and "too expensive" would vary by the degree of price knowledge (or other informational cues) exhibited by the buyer (Kosenko 1987).

The initial argument for the existence of price thresholds is based on psychophysics and its emphasis on perception to justify lower and upper price limits. However, price limits are defined in terms of attitude (purchase intention) which is not a perceptual variable. As a result, a direct translation to price perception is that, given a range of stimuli to be evaluated, some of those prices will not be perceived (Kosenko 1987).

Empirical Support

While the concept that buyers possess price thresholds (acceptable price range) has empirical support (Stoetzel 1970; Adam 1958; Foulhe 1970; Gabor and Granger 1966, 1970; Sherif 1963; Monroe 1971; Monroe and Venkatesan 1969; Raju 1977; Downey 1973; Cox 1986), only Foulhe (1970), Raju (1977), and Cox (1986) have attempted to investigate specific factors that affect price limits and/or acceptable price range.

Foulhe (1970) examined the effect of brand knowledge on acceptable price range of two products --- detergent and packaged soup. He reported that the branded products had narrower acceptable price ranges than their unbranded counterparts. Unfortunately the author presented no statistical support for the findings. Using meta-analysis, Kosenko (1987) reported that only in absolute terms was the acceptable price range narrower for the branded packaged soup. However, branded laundry detergent had a wider acceptable price range than its unbranded counterpart. Nevertheless, branded products did have a greater impact on individual price thresholds than did the unbranded products. That is, the lower and upper price limits were greater for the branded products than their unbranded counterparts. Nonetheless, the study does suggest that brand name is one source of market information that may effect price limits and acceptable price range at least for some products. This finding is consistent with some of the price-quality literature that have found a price-quality interpretation in terms of brand name (Jacoby and Olson 1976, Monroe and Petroshius 1981).

Raju (1977) investigated the impact of product involvement in terms of product familiarity on the acceptable price range using the same method. The acceptable price range was found to be narrower at $p = .10$ for those subjects that were familiar (more involved) with a stereo receiver (no brand name was provided), although no significant difference was reported for the two conditions for the lower and upper price limit.

While the two studies produce conflicting results, the major weakness of the methodologies employed was the lack of control of subject prior price knowledge such that the two groups may not have been statistically equivalent despite random assignment to the treatment groups. For example, Foulhe (1970) concluded in his study that the price limits, and therefore the acceptable price range, may be based in part on past prices paid or the prevailing price knowledge of the consumer. Moreover, neither author specified if their subjects

evaluated prices representative of the actual market prices. Therefore, price knowledge differences among their subjects may have confounded the results.

Cox (1986) addressed the methodological limitations mentioned above. He examined the hypothesis that buyers do not enter a purchase situation with "rigidly" formed price limits, but that those price limits are "shaped or formed" in part by the prices that a buyer encounters in the marketplace, and that price interpretation is predicated to some extent by the prices last paid for the product. He based his argument on his review of price awareness and human psychological literature. That literature suggests that subjects with little experience with the stimuli they are asked to evaluate may use the prevailing stimuli as a frame of reference for their evaluation. He found that price limits were related to prices last paid (or prior purchase experience), and that at least the lower price limit (but not the upper price limit) was shifted by the range of the prices presented to the consumer. This would suggest that consumers adjust at least the lower price limit by the prices to which they are exposed. Most importantly, Cox (1986) reported that the upper price limit shift may have been masked by the large degree of variability in the upper price limit relative to the variability in the lower price limit. This finding confirmed the large variability in the upper limit reported by Foulhe (1970) and Raju (1977) and leads to identifying some factors that explain some of the variability in price limit measurement. Moreover, this finding indicates that prior price knowledge differences between subject groups may have confounded the results of the Foulhe (1970) and Raju (1977) research.

In summary, there is some research evidence to suggest that market price knowledge may unravel the conflicting empirical results. Consumer market price knowledge seems to be a logical factor that should influence price threshold measurement.

Hypotheses

Based on the theoretical framework and the literature review, the hypotheses guiding this research are:

Hypothesis 1: There is an inverse relationship between market price knowledge and the width of the acceptable price range. Subjects with market price knowledge will possess a narrower mean acceptable price range than subjects with little or no market price knowledge.

The rationale for this hypothesis has been discussed above, and is expected from Social Judgment theory. Consumers possessing market price knowledge would be more discriminating, would evaluate fewer prices as acceptable to pay for a product, and therefore would possess a narrower acceptable price range.

Hypothesis 2a: There is a positive relationship between market price knowledge and the lower price limit. Subjects possessing market price knowledge will have a higher mean lower price limit than subjects possessing little or no market price knowledge.

Hypothesis 2b: Variability in the lower price limit is inversely related to market price knowledge. Variability in the lower price limit will be lower for subjects with market price knowledge than those subjects with little or no market price knowledge.

Hypothesis 3a: There is a positive relationship between market price knowledge and the upper price limit. Subjects possessing market price knowledge will have a higher mean upper price limit than subjects possessing little or no market price knowledge.

Hypothesis 3b: Variability in the upper price limit is inversely related to market price knowledge. Variability in the upper price limit will be lower for subjects with market price knowledge than those subjects with little or no market price knowledge.

These hypotheses are exploratory in nature and are somewhat consistent with the results reported by Foulie (1970), Raju (1977), and Cox (1986). Reduction in the variability in the price limits is predicated on Social judgment theory where the more involved (more knowledgeable) the buyer, the more discriminating the buyer will become in terms of evaluating the prices presented to him/her. Buyers will adjust their evaluation of the prices presented to them relative to the actual prices in the marketplace. This view is indirectly supported through price-awareness research. That research has indicated that buyers typically have a poor memory of the prices they previously paid for products that are frequently purchased (see e.g. Dickson and Sawyer 1986; and Monroe, Powell and Choudhury 1986). Logically then, consumer acceptable price limits for an infrequently purchased product should be affected by their level of market price knowledge.

THE EXPERIMENT

Sample

Sixty-six subjects were selected from two undergraduate business courses at a major Canadian university and were randomly assigned to two treatment groups.

Product

The product selected for the experiment was based on the criteria that there would be variation in market price knowledge among the subjects, and that the product is purchased by college students of both sexes. The product used in this experiment was a personal computer. Interviews with all local computer retailers confirmed that college students were a major purchasing segment.

Dependent Variables

The dependent variables --- acceptable price range, lower price limit, and upper price range--- were measured using the Stoetzel method (1970). Subjects were provided with a detailed description of a desktop personal computer that was presented to them, and a random list of 50 prices ranging from \$1500 to \$6400. The prices differed by a constant interval of \$100. The prices limits and acceptable price range were determined by subject responses to two questions:

(1) What is the *minimum price* that you would be willing to pay for the personal computer (that is, below what price would you *seriously doubt the quality* of the product?)

(2) What is the *maximum price* that you would be willing to pay for the personal computer (that is, beyond what price would you feel it *would not be worth paying more*?)

Question 1 produced the lower price limit, question 2 indicated the upper price limit, and the difference between the lower and upper price limit established the acceptable price range for each of the subjects.

While the Stoetzel (1970) method is a simple and straight-forward method, the questions of the method have been criticized as being leading questions (Stoetzel 1970; Monroe 1971; Gabor and Granger 1966; Jacoby and Olson 1976). However, Kosenko (1987) investigated whether the "leading" question criticism really mattered in the measurement of price limits. He demonstrated that the Stoetzel (1954) method was a valid method for assessing price limits.

Procedure

Subjects were provided a response booklet consisting of: (1) an instruction sheet, (2) a page containing a product description, a series of 50 prices ranging from \$1500 to \$6400 in \$100 intervals appearing in random order, and the two Stoetzel questions concerning the lowest and highest price they would consider paying for the product, and (3) a page of questions assessing subject familiarity with personal computers, computer prices, and some demographic questions.

Market price knowledge was operationalized by providing subjects assigned to the market price knowledgeable group with the product description and a "Table" that indicated the actual retail prices that the personal computer was selling for in the local market area along with the product description. The Table contained 27 prices ranging from \$2900 to \$4100. There were 10 different prices. Those subjects were also provided a series of questions to determine whether subjects attended to the manipulation. Those questions were: (1) what is the lowest price for the computer in the local market?, (2) what is the highest price in the local market?, (3) how many different prices are there for the computer in the local market?, and (4) what is the average price in the local market? After subjects answered these questions, the subjects were provided with the same 50 prices and the two Stoetzel questions presented to the control group.

During the experiment, the subjects showed little concern in the experimental materials of their colleagues, and there was no evidence to suggest that subjects were aware of the different sets of experimental material provided. To determine the presence of demand artifacts, one question was asked to assess subject knowledge of the experiment. Based on the responses, no subjects guessed the true nature of the experiment.

RESULTS

The hypotheses were investigated using a series of independent sample t-tests, and through analysis of

covariance for each of the dependent variables. The dependent variables were the acceptable price range, lower price limit, and upper price limit. Market price knowledge was the experimental variable manipulated in this study. The market price knowledge variable had two treatment levels: (1) in the market price knowledge treatment, subjects were given a table which provided subjects with the actual prices that the product was currently selling for in the local marketplace, (2) in the no or little market price knowledge treatment, subjects received no market price information other than that present in memory. Subject prior price knowledge could not be ascertained in this study, since it was felt that the procedure would sensitize the subjects. Therefore, prior price knowledge differences among the subjects were assessed *ex-post-facto*. Therefore, the experimental hypotheses were reexamined through analysis of covariance with "prior product price knowledge" entered as a dichotomous factor. The basic and covariate results are reported in Tables 1 and 2.

Prior to the statistical analysis, exploratory data analysis was conducted on the data. The results indicated that two data points were outliers ($p < .01$). That data were eliminated from the subsequent analysis.

Hypothesis 1 was *only weakly* supported ($p = .093$). Subjects in the market price information treatment specified a narrower acceptable price range ($x = \$1335.50$) than did the subjects in the no market price information treatment ($x = \$1660.06$). This finding supports both Foulhe (1970) and Raju (1970). However, neither of the authors controlled for subject market price knowledge.

As a result, the data were reexamined through an analysis of covariance using the prior price knowledge as a covariate. The hypothesis was supported by the analysis. The prior market price knowledge covariate was insignificant ($p = .410$), but the price information main effect ($p = .083$) was found to be significant.

Hypothesis 2a was *confirmed* ($p = .000$). There was a dramatic difference in the lower price limit between the two treatment groups. The lower price limit was greater ($x = \$2709.01$) for price knowledgeable subjects than subjects with little or no price knowledge ($x = \$1966.70$). This finding is consistent with the findings of Cox (1986) and Foulhe (1970) but contradicts the finding reported by Raju (1977). This finding suggests that subjects may use the range of prices found in the purchase situation as a frame of reference for evaluating price stimuli.

TABLE 1
ACCEPTABLE PRICE RANGE, LOWER PRICE LIMIT, AND UPPER PRICE LIMIT MEANS

	ACCEPTABLE PRICE RANGE	LOWER PRICE LIMIT	UPPER PRICE LIMIT
PRICE INFORMATION TREATMENT	X = \$1335.50 SD = \$671.60 N = 31	X = \$2819.40 SD = \$477.80 N = 31	X = \$4154.80 SD = \$599.90 N = 31
NO PRICE INFORMATION TREATMENT	X = \$1606.60 SD = \$837.80 N = 33	X = \$1966.70 SD = \$361.10 N = 33	X = \$3627.30 SD = \$967.40 N = 33

TABLE 2
MEANS FOR BUYERS REPORTED ACCEPTABLE PRICE RANGE AND PRICE LIMITS ADJUSTED FOR THE PRIOR PRICE KNOWLEDGE COVARIATE

	PRICE INFORMATION TREATMENT		NO PRICE INFORMATION TREATMENT	
	SUBJECTS WITH PRIOR PRICE KNOWLEDGE	SUBJECTS WITH NO PRIOR PRICE KNOWLEDGE	SUBJECTS WITH PRIOR PRICE KNOWLEDGE	SUBJECTS WITH NO PRIOR PRICE KNOWLEDGE
ACCEPTABLE PRICE RANGE	*X=\$1437.75 SD=\$501.20 N= 8	X=\$1300.00 SD=\$728.00 N= 23	X=\$1312.50 SD=\$893.50 N= 8	X=\$1772.00 SD=\$806.00 N= 25
LOWER LIMIT	X=\$2637.50 SD=\$676.00 N= 8	X=\$2882.60 SD=\$639.50 N= 23	X=\$1812.50 SD=\$258.80 N= 8	X=\$2016.10 SD=\$378.80 N= 25
UPPER LIMIT	X=\$4075.00 SD=\$552.30 N= 8	X=\$4182.60 SD=\$625.00 N= 23	X=\$3125.00 SD=\$963.30 N= 8	X=\$3788.00 SD=\$930.60 N= 25

X = Mean, SD = Standard Deviation, and N = sample size.

* For example, the mean acceptable price range for subjects receiving price information that considered themselves as market price knowledge had a mean acceptable price range of \$1437.50.

Prior price knowledge could confound the results, but controlling for that factor reconfirmed the initial hypothesis. The covariate was found to be insignificant at the .287 level and the price information main effect was significant at .000.

Hypothesis 2b was not supported ($p = .002$) as hypothesized. Market price information did not decrease variability in the lower price limit. There was greater variability in the lower price limit ($s.d = \$639.00$) in the market knowledgeable condition than in the no/limited market price knowledgeable condition ($s.d. = \$361.10$). Moreover, variability in the lower limit increased with the introduction of market price information rather than decreased.

Hypothesis 3a was supported ($p = .027$). The upper price limit was significantly greater for subjects with market price knowledge than subjects with limited price knowledge and confirms Hypothesis 3a. Price knowledgeable subjects had a mean upper price limit of \$4084.80 while non-price knowledgeable subjects reported an upper price limit of \$3627.30. Again, the results support the findings reported by Foulhe (1970) but contradict Raju (1977) and Cox (1986). Nonetheless, it indicates that buyer perception and evaluation of a product category with high prices relative to prices within that product category price is predicated on the prospective buyer's market price knowledge. Buyers may adjust their upper price limit to reflect the true prices in the market place.

The analysis of covariance results reconfirmed the initial results. The prior market price knowledge covariate was found to be insignificant at the .251 level while the price information main effect was significant at .026.

Hypothesis 3b was confirmed. Market price knowledge reduced the variability in the upper price limit. There was less variability in the highest price subjects were willing to pay for the product ($s.d. = \$644.70$) for price knowledgeable subjects than those with little or no knowledge ($s.d. = \$ 837.80$). This finding was significant at the .025. It would seem that market price knowledge does reduce variability in the upper price limit, but not in the lower price limit.

In sum, market price knowledge did influence the lower and upper price limits, and the acceptable price range as hypothesized. However, the hypothesized reduction in the variability in the price limits was supported only in the upper price limit.

CONCLUSION

Understanding buyer acceptable price thresholds is important not only for those who set prices for their products, but for those who investigate purchase behavior where price is manipulated. This paper has attempted to bring additional insight into how market price information may impact on price limit measurement. The experimental results suggest that consumer market price knowledge should be a concern in future price threshold research.

The role of this particular variable in pricing research is important in that price is one of a number of variables always available to the consumer at the point-of-purchase. As a result, researchers attempting to establish market-wide frequency distributions should use prices reflecting actual market prices since this research and that of Cox (1986) indicate that price evaluation and interpretation is influenced by the range of price presented to the subjects. If the range of prices subjects

are asked to evaluate affect their price limits, then researchers who have measured price limits may have altered that which they set out to do by having subjects evaluate a range of prices selected by the researcher irrespective of their realism (e.g. Monroe 1971, Sherif 1963, Ragu 1977, Foulhe 1970, Stoetzel 1970).

Cox (1986) presents a practical implication of this result. A marketing manager can adjust the price range of a particular product assortment, shift consumer price limits, and influence consumer price evaluation. For example, a retailer can add a more expensive computer or just increase the price of the highest price computer to make another relatively expensive computer seem less expensive. However, this effect needs to be more rigorously examined under various experimental conditions.

Future research should examine this effect across various subject populations and product categories under product present/absent conditions using the various price threshold measurement methods. Possibly increasing realism in the purchasing task could be improved by providing subjects with an opportunity to make actual purchase decisions. Moreover, while the lower limit may have a quality interpretation, the upper limit has a quality interpretation within the context of an economic constraint. Consumers have only so much to pay for a contemplated purchase. Possibly manipulating consumer financial positions may lead to a better understanding of how price thresholds are formed and how they are shifted.

While this study examined the effect of market price knowledge on price limits, there are a number of other factors or information always available to consumers at point-of-purchase that may influence price thresholds. Brand name, store image are two such factors. Also, there may be demographic (e.g. sex, age, income) and behavioral (e.g. prior purchase experience) factors that are directly related to price limit measurement. These factors should be systematically studied.

In summary, this research is not conclusive and helps to generate questions that may lead to more substantive price threshold research. Moreover, a systematic investigation into the factors that may influence price limits must precede any development of a general price threshold theory. To that end, this author is engaged in such research.

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Advertised Comparative Price Effects on Buyer Perceptions and Behavior: A Model and Empirical Test

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ABSTRACT

The use of comparative reference prices to enhance consumer perceptions of advertised price reductions is a frequent practice among retailers. In the present study, the effects of reference prices on perceived offer value, benefits of search, and search behavior are investigated. The results of a structural equation analysis of data obtained from a 1 X 4 between subjects experiment, in which the presence of a reference price at three levels is compared with a control (no reference price) condition, are presented. Tests of an hypothesized model indicate that reference prices can impact perceived offer value and the benefits of search and that offer value and search benefit are also affected indirectly through the effects of advertised discounts (from previously charged prices) on estimates of average market prices and normal retailer prices.

INTRODUCTION

A number of empirical studies have examined from various perspectives the managerial and public policy issues involved with the use of advertised reference prices and their effects on a variety of consumer responses (e.g., Ahmed and Gulas 1982; Barnes 1975; Berkowitz and Walton 1980; Blair and Landon 1981; Della Bitta, Monroe, and McGinnis 1981; Fry and McDougall 1974; Keiser and Krum 1976; Liefeld and Heslop 1985; Sewall and Goldstein 1979; Winer 1986). The objective of the present effort is to extend this research through the development and test of a model which considers the influence of advertised reference prices on estimates of average market prices and the advertiser's regular prices, the perceived benefits of search, and a measure of search behavior in addition to the typically studied perceptions of perceived offer value. In the study, the hypothesized relationships are examined for data obtained from a controlled laboratory experiment in which advertised reference prices were manipulated at three levels: (1) an average or expected reference price; (2) an above average reference price; and (3) an extreme reference price well above expected market prices.

THE ROLE OF ADVERTISED REFERENCE PRICES AND PRIOR RESEARCH

Role of Advertised Reference Prices

Advertised reference or comparative prices represent important contextual cues that affect consumer processing of price stimuli. The influence of these comparison cues can be explained to a large extent by adaptation-level theory and Thaler's (1985) transaction theory. Regarding the former, individuals are assumed to judge a given stimulus (price) relative to an adaptation level (or internal standard) which the individual expects or has become accustomed to (i.e., has "adapted to") (Monroe and Petroschius 1981, p.49). Adaptation-level theory suggests that price perceptions depend on the actual price and the individual's internal reference price or adaptation-level (Petroschius and Monroe 1987, p. 511).

Provision of a reference price, such as a previously charged price, a manufacturer suggested price, or a competitor's price, represents a means of establishing or influencing the consumer's basis for evaluating an advertised offer.

Thaler's model (1985) proposes that advertised reference prices serve to increase the perceived value of a purchase through their effects on transaction utility. Transaction utility depends upon the merits of the deal and is positive if the actual price is less than the consumer's internal reference price. Consistent with Thaler's model, advertising the usual or regular price along with a lower asking price is an attempt to provide buyers with a price frame of reference, in the spirit of transaction utility, to augment buyers' perceptions of value (Monroe and Chapman 1986). As such, an advertised reference price may make the lower advertised sale price appear more attractive and, thus, increase transaction utility (Thaler 1985, p. 212).

Prior Research

The effects of reference prices alone and in conjunction with other contextual cues have been investigated in a number of empirical studies. Much of this research has been reviewed by Monroe and Petroschius (1981) and Della Bitta et al. (1981). Liefeld and Heslop (1985, p. 868) provide the following summary:

The independent variables employed in these studies include a variety of actual prices (e.g., sale price, offer price, regular price, manufacturer suggested list price), a variety of semantic cues (e.g., percent off, dollar off, compare at), and variations in price levels, the size of implied discounts, the medium in which the advertisement was presented, and the identification of the advertiser.

The dependent variables have been of two general types: (1) measures of consumer reactions to price statements such as believability or credibility, and (2) measures of the effects of reference price statements on perceptions of implied savings or value for the money, perceived price reduction, or motivation to buy.

The findings from this research reveal that reference prices, in spite of some discounting by consumers of actual savings, can indeed raise consumer perceptions of perceived value.

HYPOTHESIZED MODEL OF REFERENCE PRICE EFFECTS

The model of reference price effects investigated here is presented in Figure 1A. In the model, the presence of a reference price is hypothesized to positively influence consumer estimates of the advertiser's normal price, expected average market price, and perceived offer value. Indirect effects of reference prices on perceived offer value are also posited through the effects of reference prices on estimated average

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regular prices and expected average market prices. Increased perceived offer value is hypothesized to lower the benefits of search which, in turn, are predicted to be inversely related to direct patronage (i.e., no shopping of competing stores) of the advertiser.

Prior research supports the direct and indirect effects of reference prices on perceived offer value. For example, Blair and Landon (1981) found that an advertised reference price had the effect of raising consumer estimates of the advertiser's normal selling price over an ad which did not contain a reference price. The research of Thaler (1985) and Monroe and Chapman (1986) suggests that a consumer's internal reference price (reflected by expected average market price) can be influenced by an advertised reference price. The direct effects of reference prices on perceived offer value are also consistent with Thaler's (1985) premise that an advertised reference price can make a lower advertised sale price appear more attractive and, hence, increase transaction utility. Higher internal reference prices (i.e., expected average market prices) and higher expected retailer prices caused by the presence of a reference price in conjunction with a sale price should also increase perceived offer value. The first of these two predictions is consistent with Monroe's (1975; 1977) interpretation of Helson's (1964) adaptation-level theory. The second prediction (i.e., that higher estimates of the advertiser's normal price relative to a sale price can increase perceived offer value) is based upon earlier empirical research regarding the effects of larger discount levels (e.g., Della Bitta et al. 1981).

Although the effect of reference pricing practices on consumer search behavior has been identified as a critical research issue (Della Bitta et al. 1981), no studies exist which provide direct evidence regarding that issue. To the extent that an advertised reference price increases consumers' internal reference prices and the perceived value of the advertiser's offer, the perceived benefits of search will be reduced. As a result, there should be a greater likelihood that the consumer will purchase the product at the advertiser's store.

Extreme Reference Prices

The justification for the model shown in Figure 1A is based upon theory and research in which plausible reference prices (and discount levels) have been considered. In the ensuing experiment, three reference price conditions are paired with a constant sale price "only" condition. These reference price conditions are: (1) a plausible average reference; (2) a plausible above average reference price; and (3) a high reference price well above expected market prices. This latter condition represents a novel treatment and the corresponding predicted effects warrant some brief explanation.

Assimilation-contrast theory predicts that a reference price judged to be implausible will be rejected (Monroe and Petroschius 1981, p.50). This effect may result in the reference price being ignored and/or consumers lowering perceptions of the offer value and the retailer's credibility (cf., Barnes 1975; Fry and McDougall 1974). An alternative prediction is that, while consumers may "discount" the advertised price reduction, the reference price may still positively affect perceptions (and subsequent behavior) compared to a condition in which only a sale price is presented.

METHOD

One hundred and fifteen undergraduate business students, in groups of 8 to 16, participated in a lab experiment designed to test the hypothesized model of reference price effects. The study involved the purchase of a particular television brand (19" RCA Colortrak) from a market consisting of nine retail stores. Subjects within each session were randomly assigned to one of four treatment conditions: (1) sale price (\$319) only (i.e., a no reference price control condition); (2) sale price (\$319) plus a \$359 reference price; (3) sale price (\$319) plus a \$419 reference price; and (4) sale price (\$319) plus a \$799 reference price. These prices were selected based upon pretests to represent: (1) a sale price that would be considered reasonably low but not so low as to discourage search; (2) plausible average (\$359) and above average (\$419) reference prices; and (3) a high reference price (\$799) well above expected market prices. The model was examined for three "samples": (1) the no reference price control group combined with the \$359 reference price group (n=57); (2) the control group combined with the \$419 reference price group (n=57); and (3) the control group combined with the \$799 reference price group (n=58).

Procedure

Data were collected via subject interaction with personal computers on which they were provided with instructions and performed a practice task prior to the television shopping and purchase task. Subjects were told that prices used in the study were taken from a real (but disguised) market. Subjects were told that the local Better Business Bureau (BBB) published an annual retail survey for assisting consumers in shopping and that the research in which they were participating was designed to evaluate the effectiveness of the retail price survey. A practice task, prior to the television purchase, involved shopping and purchasing a vacuum cleaner. After initial interaction with the computer, in which the purpose of the study was explained, subjects were exposed to the electronic edition of the annual price survey for home entertainment products. These procedures enabled the establishment of marketplace retailers and provided information regarding local price structure and the cost of search. General information regarding several products (but not TV's) described fairly large price differences within the market. After exposure to the retail price survey, subjects responded to several Likert items on the computer regarding their perceptions of the price survey and their understanding of the shopping system.

Next, the subjects were exposed to the "one" advertisement during the previous week for the needed 19-inch television. Subjects were told that only one store (of the nine comprising the relevant market) had advertised the particular TV during the previous weekend and that the ad was provided as a matter of realism (i.e., many consumers check retail newspaper ads prior to shopping). Upon exposure to the ad, perceptions of the offer and beliefs regarding market TV prices were assessed. Upon completion of these items, subjects shopped the retailers as needed until a purchase was made, responded to a final post-task series of questions which evaluated their perceptions of the marketplace and the experimental setting, and were then dismissed and debriefed in a later session.

The Shopping System. Participants were allowed to telephone for information or travel directly to a store

without shopping to make their purchase. Five of the nine stores in the computerized marketplace (including the advertising store) carried the desired brand. Two stores had prices that were lower (\$299 and \$279) than the advertised \$319 sale price while two stores had prices that were higher (\$349 and \$449). Subjects were given a beginning bank balance of \$500, which was used to provide motivation for subject performance. The purchase task was timed by the computer and \$3.00 was deducted for each minute spent shopping. In addition, \$10.00 was charged for traveling to a store. The shopping system included time delays that simulated waiting for information and reaching the correct store department. Once the subjects finished a telephone call and obtained (or failed to obtain) the price information, they were given the option of calling another store or traveling to a store to make a purchase. The interactive computer system calculated an ending balance for each subject which included costs incurred for time and travel (i.e., search costs) and for buying the television set. Economic incentives were included in the study to encourage high ending balances (and hence to incorporate the costs and benefits of search).

Operational Measures

The exogeneous variable (i.e., the presence of a reference price) was operationalized as a zero-one dummy variable (cf., Bagozzi 1977) in which the control condition is paired separately with each of the three reference price treatment conditions. Consequently, the subsequent tests of the hypothesized causal structure involved three nonindependent (i.e., the control group is included in each analysis) sets of analyses. Estimates of expected average market price and the advertiser's normal price (both obtained after the retail ad was reviewed) were included as endogeneous variables. Perceived offer value was operationalized as the sum of the responses to three disagree-agree statements (cf., Berkowitz and Walton 1980; Della Bitta et al. 1981). The coefficient alpha estimate of internal consistency reliability for this three item measure was .79. Perceived benefit from search was defined as the difference between the sale price (\$319) and each subject's expected lowest price (prior to the shopping task). The last endogeneous variable, purchase without search, was operationalized as a zero-one categorical measure where one represented those individuals purchasing at the advertised store without shopping.

RESULTS

Data Checks

Forty-four percent of the study participants reported prior shopping experience for a television. This experience was not related to the treatment conditions. On average, more than four stores were shopped, a number which is higher than store search estimates obtained in field studies. Responses to the post experimental task measures indicated that the subjects were motivated in the task and felt it was realistic. For example, 85 percent of the subjects felt that the price they paid was the lowest available and virtually 100 percent of the subjects agreed that they had tried their best in the payoff task (mean = 6.75 on a 7 point scale). Further, debriefing of subjects and post-experimental inquiry revealed that demand artifacts due to large price differences or the experimental methods were not problematic.

Structural Equation Analysis

LISREL (Joreskog and Sorbom 1984) was used to analyze the data and the standardized parameter estimates and overall fit statistics are based upon analysis of the correlation matrices. Since all constructs were measured with a single indicator, our interests focused upon the structural equation relationships.

Original Model. The results of analyzing the original hypothesized model are summarized in Tables 1 and 2. (Ignore for the moment the estimates associated with the revised model.) The overall fit statistic (Table 1) and the estimated path coefficients (Table 2) depict mixed support for the hypothesized model. That is, the overall estimates suggest that the model does not fit the data adequately while the direction and significance of the path coefficients are largely consistent with the predicted relationships. (Efforts to improve model fit are described in our subsequent discussion of the revised model.) Regarding the overall estimates of model fit, the rather large significant chi-square values and low adjusted goodness-of-fit statistics suggest that the model is an inadequate representation of the data. The latter estimates were .62, .57, and .68 for the \$359, \$419, and \$799 analyses, respectively. The corresponding total coefficient of determination estimates were .17, .21, and .46. These increasing values are undoubtedly due to the differential impact of the varied reference price treatment levels.

The standardized path coefficients for the original model across the three separate analyses are presented in Table 2. With only several exceptions, the estimated

TABLE 1
OVERALL MODEL FIT STATISTICS[a]

Statistic	Control vs. \$359		Control vs. \$419		Control vs. \$799	
	Original	Revised	Original	Revised	Original	Revised
Chi-Square	37.29	6.33	49.73	3.41	31.33	3.95
P-Level	0	0.28	0	0.64	0	0.56
GFI	0.85	0.97	0.84	0.98	0.88	0.98
AGFI	0.62	0.85	0.57	0.91	0.68	0.91
RMSR	0.16	0.07	0.16	0.04	0.11	0.05

[a]Original and revised models have 8 and 5 degrees of freedom, respectively

TABLE 2
PATH COEFFICIENTS FOR ORIGINAL
AND REVISED MODEL[a]

	Control vs. \$359		Control vs. \$419		Control vs. \$799	
	Original	Revised	Original	Revised	Original	Revised
<i>Exogeneous</i>						
gamma11	-0.01	-.19[c]	.20[c]	0.01	.38[b]	0.03
gamma21	-.35[b]	-.35[b]	.33[b]	.33[b]	.57[b]	.57[b]
gamma31	.22[b]	.22[b]	.27[b]	.25[b]	.39[b]	.39[b]
<i>Endogenous</i>						
beta31	0.1	0.1	.35[b]	.33[b]	.31[b]	.31[b]
beta32	.44[b]	.43[b]	.23[b]	.22[b]	0.05	-0.06
beta43	-.24[b]	-.26[b]	-.35[b]	-.19[c]	-.23[b]	-.23[b]
beta54	-.21[c]	-.21[c]	-0.04	-0.04	-0.13	-0.13
beta12	--	.57[b]	--	.60[b]	--	.63[b]
beta41	--	-.46[b]	--	-.71[b]	--	-.33[b]
beta42	--	.38[b]	--	.38[b]	--	.37[b]

[a] Total coefficient of determination estimates were .17, .21, and .46 for the \$359, \$419, and \$799 analyses, respectively.

[b] $p < .05$.

[c] $p < .10$.

relationships were as predicted¹. The paths in the two larger discount levels (\$419 and \$799) were largely as anticipated; however, the negative relationship found between the measure of search benefit and the (0,1) measure of search was weaker than anticipated.

The major findings can be summarized as follows. First, the presence of a reference price can increase estimates of average market price and the advertiser's normal price in addition to increasing the more frequently studied offer value perceptions. Second, the strength of these effects (as evidenced by the size of the path coefficients) increase with the size of the discount. Third, these effects hold even when the advertised discount is well-above normal expectations.

As predicted, a consistent negative path was found between perceived offer value and the perceived benefits of search. This supports earlier findings that increasing offer value through the use of advertised discounts from higher previous prices can lower the benefits to search. Also, a negative but weak relationship was found between the benefits of search and search behavior. This latter finding, while restricted by the dichotomous coding scheme, supports the premise that decreased benefits from search increase the likelihood of direct patronage of the advertised retailer.

¹These exceptions include the insignificant paths between the reference price manipulation and perceived average market prices (gamma 1,1) and between average market prices and perceived offer value (beta 3,1) for the average reference price analysis. Also, in the same \$359 condition, the path between the reference price manipulation and the estimate of the advertiser's normal price was unexpectedly negative. This was due to the fact that, prior to seeing the ad, subjects generally expected that the average market price would be above \$359. As such, the presence of the \$359 reference price actually *lowered* subjects' estimate of the advertiser's regular price.

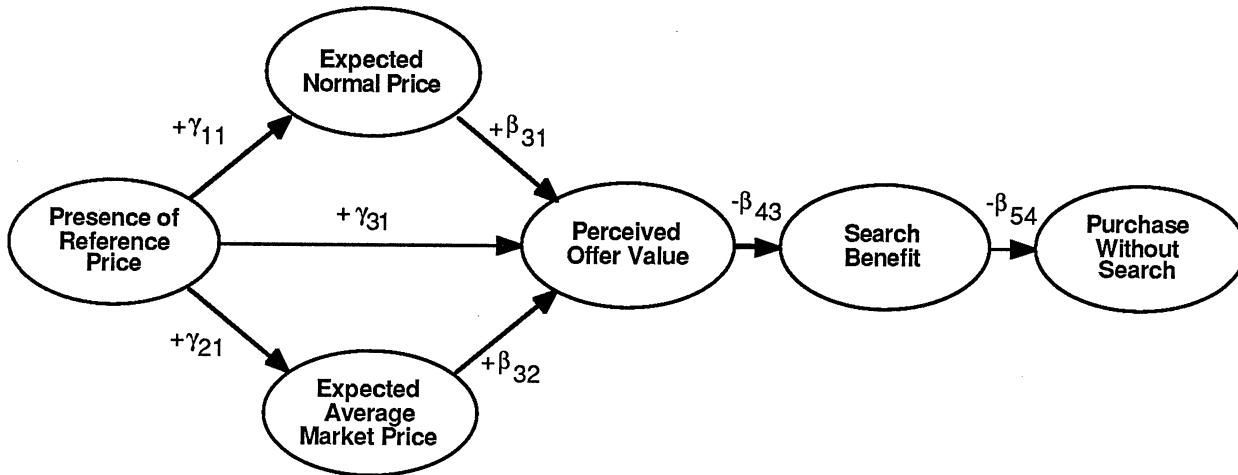
Revised Model. Analysis of omitted paths within the original model through tests of a series of nested models revealed that the model could be improved by the addition of several structural paths (cf., Ryan 1982; MacKenzie, Lutz, and Belch 1986). Further, these paths provide additional insight regarding the effects of reference prices and the mediating roles of expected advertiser normal price and market price perceptions. The overall fit statistics and the standardized path coefficients for a revised model are shown in Tables 1 and 2 along with the original model results.

The first comparison involved adding individually five paths: (1) from expected average market price to search benefit; (2) from expected normal price to search benefit; (3) from expected normal price to expected average market price; (4) from expected average market price to purchase behavior; and (5) from expected normal price to purchase behavior. Comparisons of these less restricted models nested within the original model enabled chi-square difference statistics with one degree of freedom. Some comment is warranted regarding the direction of the path between expected normal price for the retailer and expected average market price. The test of the path from expected normal price to expected average market price (beta 1,2) in lieu of the reciprocal path (beta 2,1) was based upon an intuitive argument. That is, if subject estimates of the average *market* price are raised by the presence of the retailer's regular price in an ad, that effect should occur in part because the advertised reference price raises subject estimates of the regular price (than if no reference price were provided). In other words, information about a retailer's normal selling price should be used by subjects as one piece of evidence in judging market prices.

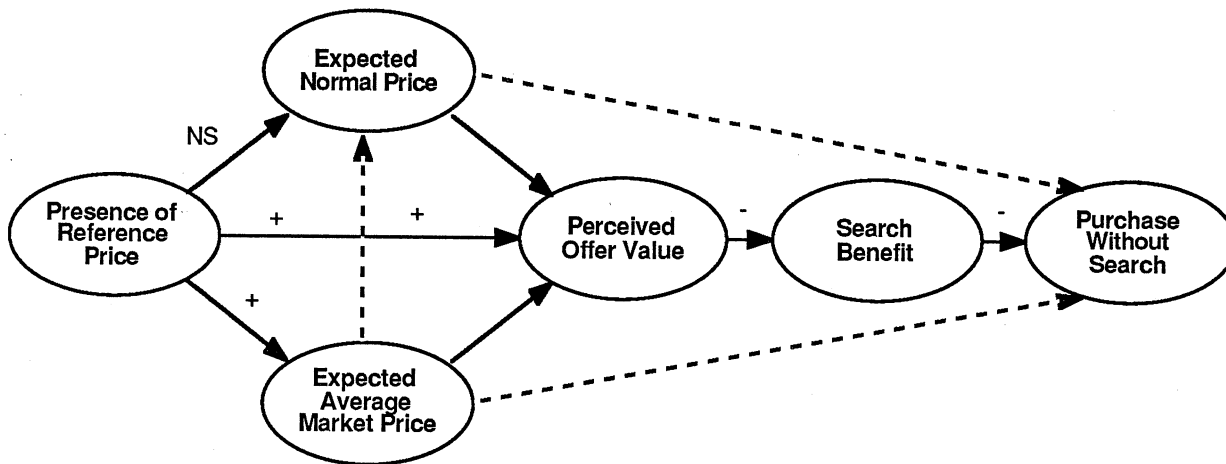
Two of the additional paths in these less restricted models were consistently significant. These results suggest the addition of direct effects of, first, expected normal price on expected average market price and, second, expected average market price on search benefits. The former path was particularly robust across all three

FIGURE 1
HYPOTHESIZED ORIGINAL AND REVISED MODEL OF REFERENCE PRICE EFFECTS

A. Original Model



B. Revised Model [a]



[a] Dotted lines reflect revisions to original model.

treatment conditions. The additions of these paths added substantially to model fit. Models in which multiple paths were allowed were also examined. The even less restricted models involved inclusion of the two significant paths identified in the previous nested model results plus the path between expected normal price and the benefits of search. Given the strong relationship between expected normal price and expected average market price identified in the individual path tests described above, other paths involving expected normal price perceptions were deemed appropriate. The chi-square significance tests involving the addition of these multiple paths were statistically significant and suggested then the revised model (with now five degrees of freedom) shown in Figure 1B.

As shown in Table 1, the overall chi-square goodness-of-fit statistics are now not significant. The adjusted goodness-of-fit statistics have improved from .62, .57, and .68 to .85, .91, and .91 for the \$359,

\$419, and \$799 samples, respectively. A number of effects were observed consistently across the three reference price conditions. First, consistent with earlier research regarding the effects of reference prices, the presence of a reference price directly impacts perceived offer value. And, for reference prices promoting sizable discounts, the presence of a reference price significantly increases the perceived normal price of the advertiser. Further, increased perceived offer value is inversely related to search benefit. The effects of the reference price manipulations studied here were found to operate significantly through changes in perceived regular prices of the advertiser. That is, perceptions of the retailer's normal price were found to be directly related to search benefits and perceptions of average market prices which, in turn, were also found to be related to the benefits of search.

Differences Across Reference Price Levels.
Examination of the estimated relationships across the

treatment levels revealed a number of differences. For example, the effects of the reference price manipulation on average market price perceptions for the above average and extreme reference prices was found to operate largely through its influence on perceptions of the advertiser's normal price. In support of this finding, the path between average market price estimates and perceived offer value was found significant only for the two large advertised discounts. In contrast, the effect of the expected advertiser normal price on perceived offer value was not significant in the extreme condition. This latter finding may suggest some degree of discounting of the extreme reference price claim.

DISCUSSION

Multiple tests of the model presented here, in which a sale price only condition was paired with three reference price treatments (cf., Bagozzi 1977) largely supported the predicted relationships. Further, a series of nested model analyses suggested that reference prices also impact the perceived benefits of search through their effects on estimated average market prices and normal retailer prices.

A number of caveats are in order and, certainly, the generalizability of our findings should not be overstated. The study was conducted in a laboratory setting in which student subjects were required to shop for a particular brand of a single product. Additional study in more realistic research environments employing other subject groups and products is warranted. However, in spite of these limitations, a number of interesting findings regarding the general effects of reference prices and, specifically, the effects of an extreme or exaggerated price reduction were found. To summarize these results:

1. The presence of a reference price enhances perceived offer value and the size of this effect seems to increase as the advertised discount increases (even to an exaggerated level). The fact that the \$799 reference price claim was perceived to be exaggerated was supported by declining scores on measures of offer "believability" which were collected with the measures analyzed here.
2. The perceived benefits of search are enhanced, for a given sale price, by increased estimates of normal retailer prices. However, the benefits of search are reduced when perceived offer value is higher and when expected average market price is lower.

These findings suggest that even exaggerated reference prices can influence consumer beliefs about advertised products and market prices. This conclusion is further supported by additional analyses which indicate that the extreme reference price was apparently discounted rather than totally dismissed. The weak predictive ability of the hypothesized antecedents for search behavior, however, was disappointing. In spite of consistent negative estimates as anticipated, the estimated relationships (in both the original and revised model tests) were small and not significant. This weak predictive finding is undoubtedly due, in part, to the dichotomous nature of the variable and the uneven distribution of subjects across the direct purchase/no direct purchase categories. Future research regarding the determinants of search behavior is needed and should be

of interest to researchers with public policy and/or managerial interests.

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Consumer Information, Competitive Rivalry, and Price Setting: When Ignorance Isn't Bliss

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ABSTRACT

The basic cost-benefit description of consumer search behavior which lays the foundation for much work in marketing is drawn from economics. However, consumer researchers have not considered the cost-benefit model as economists have intended it: as an explanation of the resulting price structure in competitive markets. This research takes an empirical look at how different levels of consumer information affect seller pricing under two conditions: (1) when major competitors respond quickly to a smaller competitor's price cut and (2) when they do not respond. The pilot test results indicate that better consumer information does narrow the dispersion of market prices. However, competitor rivalry drives prices down dramatically, even when consumers are poorly informed. The implications of the results for theory and future research are discussed.

INTRODUCTION

Fundamental to consumer researchers' explanation of information search is economist George Stigler's (1961) "cost-benefit" model (Granbois 1977; Punj and Staelin 1983). Stigler's model leads to the conclusion that a market may contain buyers who are poorly informed; i.e., those for whom the benefits of gathering information do not exceed the costs. Consumer researchers, however, do not carry forward the major proposition underlying Stigler's and other economists' work in this area: that differences in competitive prices may exist even in a market for homogeneous goods because some consumers are poorly informed about what prices are available.

Economists have in the past 20 years been quite progressive in testing economic theory in laboratory settings (recent articles in *Business Week* and the *Wall Street Journal* attest to the growing importance of this work). This work has begun to appear at ACR conferences, particularly research addressing pricing behavior in markets with imperfectly informed consumers (Grether and Wilde 1984; Grether, Schwartz, and Wilde 1985). Grether et al. (1985) concluded their presentation by noting the great potential for marketing researchers and economists to learn from one another.

The present research presents a methodology to test whether prices will be lower when sellers believe consumers to be well informed than when they believe consumers to be poorly informed. We additionally extend the analysis of pricing behavior to consider competitive rivalry, which is not formally considered in the information economics literature. We discuss below the potential for competitive rivalry to distort or change competitors' knowledge about consumer behavior and lead (potentially unnecessarily) to price wars. The following section discusses the economic literature from which the current research questions were derived.

CONSUMER SEARCH AND SELLER PRICE SETTING: THE ECONOMICS OF INFORMATION

The concept of consumer information (i.e., consumer awareness of competitive offerings) has

become central to the explanation of seller behavior in economics. Stigler's (1961) cost-benefit model proposes that consumers decide the number of sellers to sample by weighing the economic benefits of sampling against the economic costs. According to the theory, this weighing of search cost and benefit would lead some consumers to conduct little search which, in turn, would allow some sellers to charge higher prices. The cost-benefit logic is incorporated in all the more recent developments of consumer search theory in economics (e.g., Nelson 1970; Wilde 1980).

A major criticism of Stigler's work, however, is that his model provides no formal description of the seller pricing behavior which leads to price dispersion. As Rothschild (1973) notes:

While his (Stigler's) model explains how customers should react to variability in price, it does not explain where this variability comes from or what, if anything, preserves it. (p. 1288)

Rothschild's frequently cited summary of economic models describing behavior when buyers and sellers have poor information has motivated work in economics to develop clearer specifications of how sellers set price when consumers are imperfectly informed. In particular, Salop and Stiglitz (1977) and Wilde and Schwartz (1979) present ground-breaking models of seller behavior in markets with imperfect consumer information. Each of these models explains specifically how the resulting distribution of prices in a market is a direct function of the percentage of consumers who are "shoppers" (i.e., samples more than 1 seller). Both models generally propose that sellers set prices by:

- Estimating the percentage of consumers who are "shoppers,"
- Estimating the demand curve (which is a function of the percentage of well-informed consumers), and
- Determining the profit-maximizing price given the demand curve, the firm's marginal cost schedule, and capacity and profit constraints.

Key assumptions in these widely-cited economic theories are that (1) sellers are perfectly informed about consumer search behavior, (2) sellers intuitively incorporate their knowledge of consumer search behavior in estimating their demand curves and setting prices, and (3) competitive rivalry does not affect pricing decisions¹.

¹Our consideration of competitive rivalry and its effect on pricing decisions in markets with imperfectly informed consumers is not intended as a criticism of

Important Empirical Questions

A consideration of the economics of information literature as it relates to sellers pricing behavior leads to the following empirical questions:

1. Are sellers' beliefs about consumer information-gathering as accurate as economic models assume?
2. Do sellers incorporate beliefs about consumer information-gathering into estimates of demand elasticity and pricing decisions?
3. Does consumer information gathering affect seller price setting as predicted under distinctly different conditions of competitive rivalry?

The current research examines the second and third questions. The following section considers the issue of competitive "conjecture" and considers how it may affect pricing decisions even in the face of a poorly informed consumer market.

Competitive Rivalry and Pricing

Competitive conjecture can be defined as the observation and anticipation of competitors' actions. This notion is reflected in models of competitive behavior and game theory (see Dolan 1981). It is obvious that competitors' observed and anticipated actions have an important impact on any sellers' decisions, but there exists little empirical evidence regarding when and how competitors' actions affect decision-making. Considering the pricing models discussed above an important theoretical and managerial question emerges: Is the urge to follow competitors' actions strong enough to distort sellers' beliefs about consumer behavior? A related issue is whether competitive rivalry focuses sellers so much on the competitive environment that they ignore their beliefs about consumer behavior.

A consistent finding reported in the agricultural economics literature has an important bearing on these issues. McCracken, Boynton, and Blake (1982) published comparative retail grocery prices in the Sunday editions of local newspapers in 4 test cities for 12 weeks. They measured the price of a market basket of goods across the experimental period in the test cities and four matched control cities. A clear pattern emerging from the study was that prices in the test cities (relative to the control cities) declined dramatically when the price information was published and increased again when the publishing of price was halted, a finding very consistent with the economics of information. It was found, however, that the price wars that resulted (which were so intense as to force the researchers to terminate the study early in one market) were due to competitors driving

prices down even though consumer patronage behavior remained basically unchanged (Boynton, Blake, and Uhl 1983). In other words, consumers reported that the published price information had little effect on their grocery shopping behavior². The dramatic price declines were apparently due to competitors' mistaken belief that consumers had become better informed about grocery prices and were motivated to use that information in determining where to shop.

These results have been explained recently by Benson and Faminow (1985). They propose a spatial theory of pricing which suggests that consumer store-switching may be limited by distances between stores and that some external event (like the publishing of retail prices by a third party) affects sellers' conjectures about competitors' likely responses more than it affects consumer behavior. As such, McCracken et al. (1981) observed quick and desperate moves by retail sellers in the absence of consumer behavior patronage shifts. Benson and Faminow's theory provides an interesting contrast to information economics. It suggests that sellers may initiate changes in the structure of prices in anticipation of (or in response to) competitors' actions independently of better informed consumers.

The overriding point in that predictions of seller pricing behavior derived from models in which consumers are imperfectly informed may not hold under different conditions of competitive rivalry and conjecture. There is little question that a consideration of competitor behavior is fundamental to seller pricing decisions. This study empirically examines the separate (and, possibly interactive) effects of consumer information and competitive rivalry on seller pricing decisions.

HYPOTHESES

Below we present each hypothesis and then explain the theory and logic from which it was derived. In the hypotheses the "seller" is faced with deciding whether or not to respond to a competitive price cut.

- H1 - Sellers will be more likely to follow a competitor's price cut when consumers are believed to be well-informed than when consumers are believed to be poorly informed about competitive prices.

This hypothesis is taken straight from the logic of Stigler's (1961) cost-benefit model, which was more clearly developed later by Salop and Stiglitz (1977) and Wilde and Schwartz (1979).

- H2 - Sellers will be more likely to follow a competitor's price cut when other competitors follow the price cut than when other competitors do not follow.

This hypothesis is derived on the basis of intuition and is consistent with a version of Benson and Faminow's (1985) model of price-setting in a competitive retail

these pioneering theoretical models. By analytical necessity, these authors had to make certain simplifying assumptions, including assumptions regarding competitive behavior. Rather than point out the limitations of economic theory, our aim is to broaden what we know about pricing behavior using the theory as a springboard.

²Consumers' "underuse" of this information (relative to the experimenters' and retailers' expectations) is consistent with the literature in consumer behavior which suggests that consumers are not as motivated to be informed as many models of decision-making presume them to be (Olshavsky and Granbois 1979).

market. It is also consistent with Porter's (1980) framework in as much as competitive rivalry works to drive down industry profitability.

H3 - Alternative 1. Regardless of the level of competitive response to market price-cutting, sellers will be less likely to respond to that price-cutting if consumers are believed to be poorly informed about competitive prices (i.e., the H1 prediction is invariant to the level of competitive response).

H3 - Alternative 2. As competitors respond to an initiator's price cut with their own price cuts, the effect of buyer information on seller price-setting will diminish. That is, sellers will cut prices to the same low levels whether consumers are believed to be well informed or poorly informed.

According to the information economics theory, a seller's knowledge that consumers are poorly informed should lead to a lower likelihood of cutting price no matter how many competitors cut price. However, research cited above seems to indicate that competitive rivalry has a major impact on sellers' pricing decisions, possibly distorting sellers' beliefs about how well-informed consumers are. Alternative 1 under H3 is consistent with the information economics theory while Alternative 2 reflects the potentially "irrational" effect that competitive rivalry can have on seller decision-making (Benson and Faminow 1985).

METHOD

The research examines price-setting behavior via a case study in which information about consumer and competitor behavior is experimentally manipulated. Below we describe the case study, the sample, and design of the study.

The Case Study

In the case study the respondent plays the role of regional pricing manager for OURSTORE (a disguised retail grocery chain) who has to decide what prices to set for a group of products in the coming week. In the case, OURSTORE's major market has just been attacked by a relatively small share competitor (FEISTY) with an aggressive price cutting campaign. The competitive stores in the fictitious market (Anytown; a city of 800,000 which respondents are told is a real market) are all described in the case as fairly similar full-service retail operations. Differences in retail assortment, volume and profitability, clientele, and store layout are not described explicitly in the case to keep it simple. The case explains the competitive situation and presents the relative shares of the major competitors, which are as follows:

Chain	Number of Stores	Share of Anytown Market (based on total \$ volume)
LEADER	25	40 percent
OURSTORE	16	23 percent
OPPONENT	16	22 percent
FEISTY	6	10 percent
All others	-	5 percent

The case describes FEISTY's current price promotional blitz (which is reported to have begun on October 6) and presents competitive price information for eight products from August 25 and October 20 price surveys. The case then discusses consumer shopping behavior in the Anytown market, reporting results from recent consumer surveys conducted by a "major university and an industry organization both located in Anytown." Finally, the respondent is presented with the decision task: setting prices for the week of October 27 for the 8 products listed in the price surveys.

The Sample

The sample consisted of 68 masters students enrolled at a major state university. The students were all taking a marketing strategy course and were administered the case in a classroom setting. A structured questionnaire was attached to the case to obtain subjects' price recommendations and measure their beliefs about the Anytown market.

Experimental Design

The study involved a 2 X 2 design in which consumer information and competitor response were manipulated. The manipulations took the following form:

1. Consumer Information. Respondents were told in the case that several recent research studies have indicated that either 10 or 75 percent of consumers are active comparison shoppers in the market.
2. Competitive Reaction to FEISTY's Price Cuts. There are two levels to this manipulation: (a) neither LEADER nor OPPONENT have responded to FEISTY's price cuts by cutting price; or (b) both LEADER and OPPONENT have responded by cutting price. This information is reflected both in the case text and in the price surveys attached to the case. The four experimental conditions (and cell sizes) were (1) 10 percent comparison shoppers/no competitive price cuts (18); (2) 10 percent comparison shoppers/competitors cut prices (16); (3) 75 percent comparison shoppers/no competitive price cuts (17); and (4) 75 percent comparison shoppers/competitive price cuts (17).

The Questionnaire. The questionnaire first asked subjects to recommend retail prices for the eight products in light of the following wholesale prices provided in the questionnaire:

	Wholesale Prices
Bananas (branded 1 lb.).....	\$.25
Kellogg's Corn Flakes (24 oz.).....	1.70
Oscar Meyer Sliced Bologna (8 oz.).....	.93
Whole Milk (1 gallon).....	1.45
Minute Maid Orange Juice (Frozen - 16 oz.).....	.85
Hellman's Mayonnaise (1 quart).....	1.65
Coke (2 litre).....	.93
Maxwell House Coffee (1 lb. Regular Grind).....	2.75

The questionnaire asked respondents to briefly justify the prices they had recommended and to respond to a structured question inquiring about a longer term pricing strategy recommendation. Respondents were asked to estimate 2 litre Coke quantity sold at various prices (discussed below) and then answered a series of agree-disagree items which measured their beliefs about the local market.

Selection of the Product Categories. It was felt that the number of product categories used should be limited to eight to reduce the complexity of the task. Further, generally "hot" specials items were selected for the study because these would be key candidates for price cuts in a competitive retail environment. The eight items used are ones normally falling into competitive price comparison lists and were selected from a listing of comparative product prices published in *Progressive Grocer*, which also provided common retail prices. The wholesale prices provided in the questionnaire were obtained from a local retailer.

RESULTS

Manipulation Checks

Respondents' perceptions of consumer information were measured with three "disagree-agree" items: "Most consumers in Anytown are well-informed about competitive grocery store prices," "Most Anytown consumers are NOT active users of retail grocery print advertising," and "Most consumers in Anytown will find out if your prices are higher than your competitors." In addition, respondents were asked to indicate their rating of Anytown consumer "informedness" on a 10 point scale ranging from "poorly informed" to "very well informed." Coefficient alpha for these items was .83, so the items were summed to form a scale (ISCALE) ranging in value from 3.5 to 20.³ The mean ISCALE score was 8.90 for the "10 percent comparison shopper" group and 15.04 for the "75 percent" comparison shopper group ($p < .001$, $\omega^2 = .57$), supporting the consumer information manipulation.

The manipulation checks for the competitive response manipulation involved two disagree-agree items and a 10 point rating of competitors' responsiveness to the new competitive conditions. The two disagree-agree items were "OURSTORE's competitors have reacted quickly to FEISTY's new low price strategy" and "In response to FEISTY's new low price strategy, OURSTORE's competitors are fighting fire with fire." These three measures had an alpha of .78 and were summed to form a scale (RSCALE) which ranged in value from 2.5 to 15. The mean RSCALE scores were 5.13 for the "no competitive response" condition and 11.82 for the condition in which competitors followed FEISTY's price cuts ($p < .001$, $\omega^2 = .74$), indicating a substantial effect of the manipulation on subjects' perceptions of competitor responsiveness.

There were no significant interactions between the consumer information and competitive response manipulations on either ISCALE or RSCALE. Consistent with a basic test of manipulation validity (Perdue and

Summers 1986), the competitive response manipulation did not affect ISCALE ($p = .422$) and the consumer information manipulation did not affect RSCALE ($p = .248$).

Perceived Price Sensitivity

Fundamental to economic theory is the notion that sellers' estimates of price elasticity of demand drive pricing decisions. Further, in models of price-setting when buyers are imperfectly informed, sellers' estimates of their demand curves depend largely upon their beliefs about consumer information. Our study examines this proposition as well as the possibility that competitor reactions affect sellers' beliefs about price sensitivity. Two approaches were taken to examine the effects of our manipulations on perceived price sensitivity of demand.

First, responses to belief statements assessing perceptions of price sensitivity were examined. Three disagree-agree statements ("Most Anytown consumers will shop elsewhere if your prices are higher than competitors' prices," "Consumers in Anytown are very responsive to price changes," and "Anytown consumers demand low supermarket prices") and a 10 point rating of Anytown consumers' price sensitivity were summed to form PSSCALE (alpha = .83, possible range 3.5 to 20). A significant main effect for the consumer information manipulation was discovered (PSSCALE means = 9.00 and 13.74 for the 10 percent and 75 percent groups, respectively, $p < .001$, $\omega^2 = .43$), but no main effect for the competitive response manipulation was observed (PSSCALE means = 11.22 and 11.29 for the "no response" and "response" groups, respectively, $p = .39$). Clearly consistent with the information economics theory, beliefs about consumer information had a strong effect on sellers' estimates of price sensitivity. However, estimates of market price sensitivity were not influenced by competitors' reactions to FEISTY's price cuts.

Subjects' estimates of price sensitivity were examined more explicitly for one product: 2 litre Coke. Subjects were told that OURSTORE had sold 1000 cases of 2 litre Coke during the week of October 20 when the Coke was priced at \$1.79. They were then asked to estimate how much Coke would have been sold had OURSTORE priced the Coke at \$1.99, \$1.59, \$1.39, \$1.19, and \$.99. In short, subjects were asked to estimate the demand curve. Consistent with the RSCALE results discussed above, the competitive response manipulation had no effect on the quantities estimated at each price. However, the consumer information manipulation did affect the demand curves estimated. At each price point below \$1.59, the group believing that 75 percent of consumers were comparisons shoppers estimated significantly greater unit sales than the group believing that only 10 percent comparison shopped. The average arc elasticity of demand between the \$1.59 price point and the \$.99 price point was -1.02 for the 10 percent comparison shopper group and -1.34 for the 75 percent comparison shopper group ($p = .05$, $\omega^2 = .08$). Again, perceived elasticity of demand for Coke was not increased by competitors' quick response to FEISTY's price cut (mean elasticities = -1.16 and -1.18 ($p = .881$), respectively, when competitors did and did not respond with price cuts). The interaction between consumer information and competitive response was not significant in its effect on the arc elasticity of demand estimate.

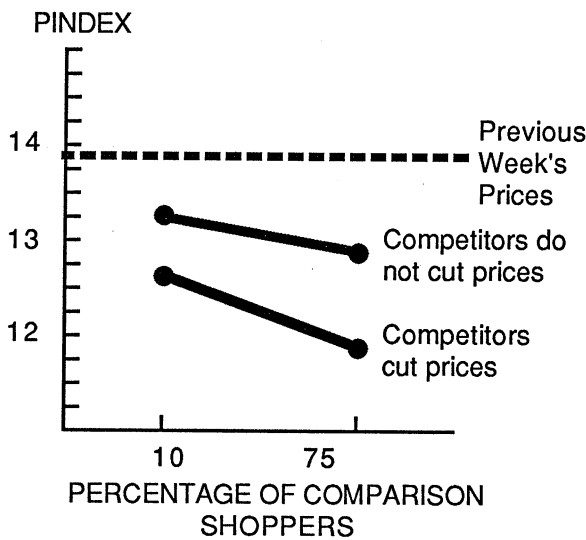
³The 10 point scale was divided by 2 prior to summing so it would not have a disproportionate weight in the scale. Also, items were recorded to be consistent in direction. The same approach was used in the creation of two other scales (RSCALE and PSSCALE) described below.

In all, these results indicate that better consumer information led subjects to believe that the market was more price sensitive. However, estimates of market price sensitivity were unaffected by competitors' reaction to FEISTY's price cut.

Pricing Results

The eight prices recommended by each respondent were summed to form an index we labelled PINDEX. An important reference point here is that the sum of OURSTORE's prices during the week of October 20 (one week before the respondents' October 27 pricing decision) was \$13.92. Figure A, which plots the mean PINDEX values by cell, indicates that all cells were substantially (and significantly) below that \$13.92 level. This is not to say that the task encouraged subjects only to slash prices. Across the eight product categories, an average of 39 percent of the sample recommended that the October 20 prices be *maintained* for the week of October 27. The main effects of consumer information ($F(1,61) = 10.26, p < .01$) and competitor response ($F(1,61) = 14.79, p < .01$) were both significant in the predicted directions, with an overall omega-square of .36. The results support both H1 and H2 described above.

**FIGURE A
AVERAGE MARKET BASKET PRICES**



It is interesting to note that, in spite of the fact that the competitor response manipulation had no effect on estimates of consumer price sensitivity, that factor still had a dramatic effect on subjects' pricing decisions. In fact, the competitive response factor accounted for somewhat more variance in pricing behavior (omega square = .22) than did the consumer information factor (omega square = .14). The fact that competitor response significantly affected pricing decisions under *both* conditions of consumer information are discussed below.

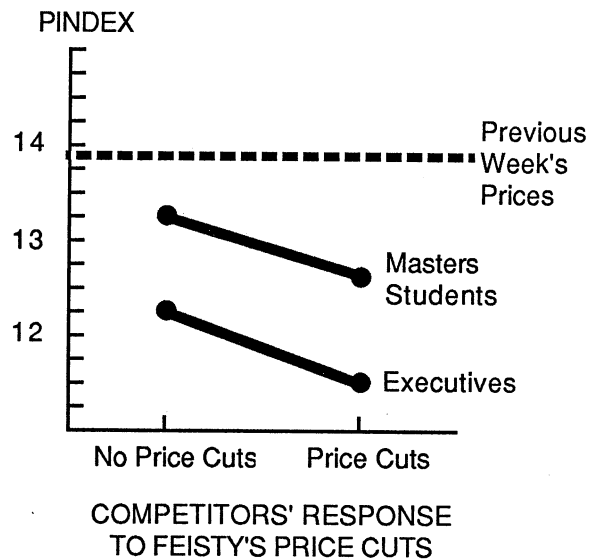
The interaction between consumer information and competitive response was not significant ($p = .527$), providing support for alternative 1 of Hypothesis 3 described earlier. In other words, the intensity of competitors' response did not change the result that better consumer information reduced the dispersion of

prices in the market. We conclude that, consistent with the information economics theory, subjects' beliefs about consumer information affected both estimates of price elasticity and pricing decisions. Further, this effect was not diluted by competitors' response to FEISTY's price cuts.

Pricing When Consumers are Poorly Informed

Information economics theory proposes that sellers should be less willing to drop prices when consumers are poorly informed than when they are well informed about competitive prices. The results above show strong support for this proposition. A more specific and subtle interpretation of the theory is that, when consumers are poorly informed, market prices should remain dispersed even if competitors cut price. However, our results indicate that the dynamics of competitive rivalry appear to produce pricing behavior under conditions of poor consumer information that is different from expectations based upon the theory. Figure B presents the PINDEX results for the 34 masters students and 11 retail grocery executives from a separate pilot study who were presented with the case stating that only 10 percent of consumers were comparison shoppers.

**FIGURE B
PRICE-SETTING IN THE MARKET WITH
ONLY 10 PERCENT COMPARISON
SHOPPERS: MASTERS STUDENTS VS.
EXECUTIVES**



The first thing to note in Figure B is that all the mean PINDEX scores are significantly lower than \$13.92, OURSTORE's prices during the week of October 20. This, in itself, is inconsistent with the information economics theory which would propose that the subjects should hold off from price-cutting since consumers are poorly informed. The possibility exists that the respondents in the "10 percent shopper" condition may have thought that FEISTY's price cuts (which in the case occurred *after* the consumer surveys) generated more consumer search and therefore led to greater price sensitivity. However, these subjects' average post-task estimate of the percentage of comparison shoppers was

not significantly different than the 10 percent figure given in the case.

Second, it is of interest to note that executives recommended markedly lower prices than did the students (fully \$1.00 less for the eight products in each condition). This reflects the aggressive stance that most grocery chains have taken to pricing in the face of competitive price cuts, particularly for items for which consumers are believed to be price sensitive. On the whole, executives in this "poor consumer information" condition recommended that prices for the eight products be dropped by over \$2.00 compared to the previous week's prices.

The most interesting result, however, is that competitive response affected price-setting even though consumers were poorly informed. For both groups of subjects, LEADER's and OPPONENT's quick reaction to FEISTY's price cuts led to lower prices than when LEADER and OPPONENT did not reduce prices. Competitive rivalry clearly affected pricing behavior and did so independently of consumer information. What seems inconsistent with the information economics theory, however, is that competitors' quick response to FEISTY influenced subjects' price-setting even when only 10 percent of the consumer market was described as comparison shoppers.

DISCUSSION

The general objective of research in this stream is to understand how information drives the behavior of buyers and sellers in the marketplace. The focus of the current study was how sellers set prices, a topic addressed more extensively in the experimental economics literature than in marketing in spite of its fundamental importance to our field. The case study scenario generated the following major results:

1. More informed consumers heightened subjects' estimates of consumer price sensitivity and led to more aggressive price-cutting in the face of a competitors' price cut. Interestingly, the response of other competitors did not moderate the effect of consumer information on price setting.
2. The aggressive price-cutting response of two competitors to FEISTY's low price blitz did not affect subjects' estimates of Anytown consumers' price sensitivity. In spite of this, subjects did drop prices more aggressively when the LEADER and OPPONENT dropped their prices than when the two competitors left prices the same. This raises an interesting question about classic economic theory which argues that seller price-setting depends fundamentally upon estimation of the demand curve.
3. Even when consumers were said to be poorly informed, subjects still responded to FEISTY's price threat by cutting prices of the previous week. Prices were cut even more dramatically (in spite of the poor consumer information environment) when the two competitors responded to FEISTY's threat by dropping price. This further demonstrates the impact of competitor behavior on decision-making independent of other influences. Further, this

finding is quite consistent with retailer behavior in the grocery industry today, where price is the major weapon in the battle for market share (*Progressive Grocer* 1986).

These conclusions should be tempered by the fact that the primary subjects were masters students rather than actual retail grocery price-setters. Pilot test results on the latter indicated similar patterns in price setting, although sample sizes were too small to undertake a full factorial analysis. Future studies should focus on the executives.

Economists for a number of years have made the intuitive argument that consumer information affects seller price-setting. The current study avoids the inherent difficulties of observing actual price-setting behavior by using a case study approach. This study supports the predictions of the information economics theory regarding seller price-setting behavior although, as noted above, some important questions about the theory are raised. The active price-cutting observed in this study, even in the face of poor consumer information, should not be interpreted as a demand artifact resulting from the focus on pricing issues in the case. The case clearly noted that the respondent should feel under no pressure from the home office either to cut or not cut prices. It can be argued that the future study of consumer behavior and the development of pricing models derived from either economics or marketing requires a better understanding of the behavioral tendencies (and perhaps biases) of price setters. Consideration of economic theory also reinforces the importance of studying consumer search behavior in marketing, particularly in the industry under study (the grocery industry). An important question raised by this and previous research is the following: is the fierce price competition in this industry driven by competitive "skittishness" or by a fundamental understanding of consumer demand (which is based upon knowledge of how consumers search)? As researchers of both buyer and seller market behavior, this question is worthy of our attention.

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Effect of Odd Pricing on Choice of Items From A Menu

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Abstract

Subjects who were asked to make selections for a five-course meal from a menu were found to have a greater likelihood of choosing a particular item when that item was odd-priced than when it was even-priced. Although the number of items on the menu did not affect the size of this odd pricing effect, the study does suggest some situational variables which may determine when and to what degree odd pricing will affect consumer choice.

Introduction

Odd pricing refers to the practice of expressing a price so that its ending (i.e., its rightmost digits) causes it to fall just below a round number. For example, a price setter might choose to use the "odd-ending" price of \$4.95 rather than the round number (or "even-ending") price of \$5.00. The widespread and persistent use of odd pricing by retailers (Friedman 1967; Georgoff 1972; Kreul 1982; Rudolph 1954; Twedt 1965) suggests that this technique may have effects on the consumer which are beneficial to the retailer.

However, research on the effectiveness of odd pricing has failed to provide evidence for a consistent effect. Three field studies (Dalrymple & Haines 1970; Georgoff 1972; Ginzberg 1936) have reported odd pricing effects for some conditions or products, but not others. Laboratory studies have yielded similarly inconsistent findings. Dodds and Monroe (1985) and Georgoff (1972) failed to find an effect. Lambert (1975) and Alpert, McGrath, and Alpert (1984) reported an effect for some products or groups but not others. Schindler (1984) and Schindler and Wiman (1986) have found evidence for an effect of odd pricing on long-term memory, but have not found evidence for a more immediate effect of this pricing technique.

The Amount of Attention Used to Process a Price

Such inconsistent results strongly suggest that there are one or more aspects of the situation where a consumer responds to price which determine whether or not the consumer will respond more favorably to an odd-ending price than to the equivalent even-ending price. This study was designed to test the role of one such situational variable, the amount of attention consumers use when perceiving a price.

This attention variable was chosen from consideration of a commonly proposed mechanism of the odd-pricing effect (e.g., Barker & Anderson 1935, p. 166; Bush & Houston 1985, p. 599; Lambert 1975). According to this mechanism, an odd-pricing effect occurs because consumers tend to ignore the rightmost nines and fill their places with "default" values (e.g. zeros) or with words which could be used for any rightmost digits and therefore connote numbers lower than nine. Thus, a consumer may think of \$5.98 as "around five dollars," or may consider \$395 as "three hundred and some dollars."

Although this mechanism seems plausible, it is hard to overlook that consumers will typically deny that they just ignore the rightmost nines. Some will claim that they round odd prices up to the even price. Others

will claim that they consider all of the digits in a price, not just the leftmost ones. And, in fact, it is hard to believe that consumers are so foolish as to ignore numbers which could represent a significant amount of money.

A possible solution to this problem is suggested by Brenner and Brenner's (1982) observation that rounding an odd price upwards or processing all of the digits of a price involves considerably more effort than processing only the leftmost digits (see also Nagle 1987, p. 248). Consumers may be fully aware that they *should* round odd prices upward or process all of the digits, and perhaps they often do so when there are no other tasks making demands on the consumer's limited processing capacities (see Jacoby & Olson 1977). But, in situations where there are other stimuli competing for their limited cognitive resources, consumers may fail to take the extra time or make the extra effort to refocus their attention from something else to processing these less important digits, the rightmost nines. Instead, they may end up simply ignoring these digits. In other words, while it is hard to imagine that consumers are foolish enough to ignore the rightmost nines, it is not at all hard to imagine that they are lazy enough to do so.

How well does this attention variable account for the inconsistencies in the past research on odd pricing effects? For the field studies, it is impossible to reconstruct how much attention the consumers may have been expending in the various purchase situations involved. But, in the laboratory studies, it could be argued that the subjects usually applied a great deal of attention to each price. In most of the experiments (Dodds & Monroe 1985; Georgoff 1972; Schindler 1984; Schindler & Wiman 1986), the subjects were presented with the prices one at a time in a situation where they were not pressed for time. Thus, these subjects certainly had the time to give their full attention to each price. The subjects in the Lambert (1975) and Alpert et al. (1984) studies were required to deal with four prices within one minute, and thus may have been a bit pressed for time. However, these experiments involved the subjects in a game, and this may have increased their alertness and motivation and, as a result, increased their likelihood of fully attending to each price.

Thus, these laboratory studies may all have created situations which led the subjects to allocate enough attention to each price so that they rounded the odd prices upward or fully processed the rightmost digits. It could be for this reason, then, that these studies failed to show a pronounced immediate effect of odd pricing on judgment or choice.

Design of the Experiment

This study was designed to test whether the amount of attention consumers use to process a price plays a role in determining the size of the odd pricing effect which is likely to occur. We chose to investigate this attentional variable in a situation where the subjects had to choose food items from a simulated restaurant menu. It was felt that this task, being a relatively familiar one to the subjects of this experiment, would have a good chance of evoking realistic habits of

attentional allocation. Further, both casual and more systematic observation (Kreul 1982; *Marketing News* 1986) indicates that restaurants often use odd-pricing policies.

In order to create one situation where the subjects would be likely to expend a large amount of attention to each price and one situation where they would be likely to expend only a small amount of attention to each price, we varied the number of alternative items on the menu. In the *short form* of each menu, the subjects made choices from among only 19 alternatives. In the *long form* of each menu, the subjects were faced with a total of 58 alternatives. Since the subjects who received the long menus had to make choices in the same amount of time as was given to the subjects who received the short menus, it was predicted that the long-menu subjects would pay less attention to each price than would the short-menu subjects and therefore would be less likely to consider the rightmost digits or round the odd prices up to the even numbers. Thus, they should show a larger odd pricing effect than would the short-menu subjects.

Formally, our hypotheses can be stated as follows:

- H1: Subjects will show a greater likelihood of choosing a menu item when it is odd-priced than when it is even-priced.
- H2: Subjects in the long-menu condition will show a greater tendency to choose odd-priced menu items over even-priced menu items than will the subjects in the short-menu condition.

Method

Design of the Menus

Each menu was printed on a single 8.5" by 11" sheet of paper. All of the menus were printed in the same typeface and displayed the names of alternative food items grouped under the following six headings: Appetizers, Soups, Salads, Entrees, Desserts, and Beverages. In all of the menus the headings occupied approximately the same positions on the page.

Each subject received one menu and was instructed to select one of the alternatives under each of the six headings. In other words, they were asked to order a five-course meal. For each of the five courses (i.e., all of the headings except Beverages), the alternatives consisted of at least one even-priced item, at least one odd-priced item, and at least one filler item. Each even price ended with the digits 00 (e.g., \$5.00), each odd price ended with the digits 95 (e.g., \$6.95), and the price of each filler item ended with either 25, 50, or 75 (e.g., \$5.25, \$6.50, \$2.75).

Price ending was varied by constructing two versions of each menu. If an item was odd-priced in the A version of a menu, then that item would be even-priced in the B version of that menu. Each item which was even-priced in the A version of a menu was odd-priced in the B version. For example, the Baked Flounder was priced at \$8.95 in the A version of each menu. In the B version of each menu, it was priced at \$9.00. The Broiled Pork Chops were priced at \$6.00 in the A version of each menu, and were priced at \$5.95 in the B version of each menu. Half of the subjects in the experiment received the A version of a menu and the

other half received the B version. By this means, price ending was varied while keeping constant the name of the item and its approximate position on the page.

The filler items on the menus served two purposes. The first concerned realism. Since restaurant menus typically do not consist *entirely* of items priced at or just below whole dollar amounts, it was felt that exclusive use of such prices in this study might lead some subjects to suspect that odd pricing was a critical variable. Note that the filler items were chosen from the same pool of possible items as were the odd- and even-priced items and, except for price ending, were indistinguishable from the odd- and even-priced items.

The second purpose of the filler items was that they served as a means of measuring the price and quality sensitivity of the subjects' choices and thus made it possible to confirm that the subjects were taking both price and quality into account. The price sensitivity of the subjects' choices was tested by varying the price of each filler item by exactly one dollar (note that this left unchanged the price *endings* of the filler items). The quality sensitivity of the subjects' choices was tested by systematic placement of those filler items which pretesting showed were relatively well-liked and those filler items which pretesting indicated were somewhat less well-liked. These two variables, price and quality of the fillers, were crossed. For example, a particular position under Entrees which was reserved for a filler item would contain Roast Breast of Turkey (well-liked) for \$7.50 in 1/4 of the menus, Roast Breast of Turkey for \$8.50 in 1/4 of the menus, Roast Pocket of Veal (less well-liked) for \$7.50 in 1/4 of the menus, and Roast Pocket of Veal for \$8.50 in 1/4 of the menus. Each of the resulting four menus had both an A version and a B version (which differed as to the endings of the nonfiller items), thus defining eight different menus.

For each of these eight menus there was both a long form and a short form. Each short menu was constructed from the corresponding long menu by simply deleting items until a minimum of three per course (one odd-ended, one even-ended, and one filler) was reached (the Entree category was allowed five rather than three items in order to maintain realism). Each heading in the short and long forms of the menu had the following number of alternative items:

	Short form	Long form
Appetizers	3	6
Soups	3	6
Salads	3	6
Entrees	5	28
Desserts	3	10
Beverages	2	2
Total items	19	58

Thus, the long forms of the menus contained over three times the number of items as the short forms of the menus. Since each of the eight menus previously described had both a long form and short form, the experiment contained a total of 16 different menus.

The Booklets

Each subject in the experiment received a four-page booklet. The first page of the booklet contained a description of the dining scenario and the instructions

for the experiment (see Appendix)¹. The description of the dining situation was designed to encourage consideration of price. It was felt that, without such encouragement, the lack of involvement of real money in the experimental task could lead subjects to respond on the basis of their food preferences alone.

On the second page of the booklet was one of the 16 different menus. On the third page of the booklet was a series of postchoice questions which asked the subjects about (1) the difficulty of the task, (2) the plausibility of the scenario, (3) the importance of price in their choices, and (4) what they believed the experiment was about.

On the fourth page of the booklet was a menu which was an exact copy of the menu which appeared on Page 2 of the booklet except that all prices were omitted. The purpose of this page was to test the subjects' short-term recall of the prices of the menu items that they had chosen on Page 2. This fourth page was stapled to Page 3 so the subjects would be unaware that they were going to be asked to recall prices. It was expected that if the long menu succeeded in taxing the subjects' attention, then the price recall for the chosen items in the long menu would be lower than for the chosen items in the short menu. Thus, this surprise recall task was included as a manipulation check, albeit an imperfect one.

Subjects

Two hundred and two university graduate and undergraduate students served as subjects. Data from 17 subjects were discarded because they failed to make a choice for all of the five courses of the dinner. Thus, the final sample size was 185.

The subjects were not told anything about the critical variables in this experiment until after the data collection was complete. The subjects' answers to the postchoice question about the purposes of the experiment failed to reveal any subjects who had correctly guessed the critical variables.

Procedure

The experiment was carried out during regularly scheduled class meetings. The booklets were handed out so that the 16 booklet types were distributed randomly to the members of each class. After each subject had received a booklet, the instructions and description of the dining situation were read aloud and any procedural questions were answered. Then, the subjects were given one minute to make their menu choices. Next, they were asked to complete the postchoice questions. Finally, they were given the instructions to complete the surprise recall task. The first three-fourths of the subjects were instructed not to spoil the recall measure by looking back to the second page of their booklets. For the last fourth of the subjects, the pages were coded so that the first three pages could be handed in before the recall task was begun. Analysis of the data indicated that these two procedures produced quite similar recall results.

Results

The results of this study can be divided into two categories: (1) those concerning the success of the technique, and (2) those concerning the substantive hypotheses of the study. The results concerning the technique will be reviewed first.

Results Concerning the Technique

The technique used in this study was designed to lead the subjects to take into account both price and quality when they make their choices. To test whether they in fact did so, the price and quality of the filler items were systematically varied. A two-way analysis of variance was run on the number of filler items chosen in each of the four price-quality conditions. The results indicate that more filler items were chosen when they were given the lower, rather than the higher, prices (1.10 filler items/subject vs. 0.67 filler items/subject; $F[1,181] = 10.96$, $p < .002$). Also, more filler items were chosen when they were of higher quality (i.e., well-liked) rather than lower quality (i.e., less well-liked) (1.20 filler items/subject vs. 0.55 filler items/subject; $F[1,181] = 26.15$, $p < .001$). There was no statistically significant interaction between these two variables ($F[1,181] < 1$).

These results also make possible an estimation of the price elasticity of demand for the menu items. The prices of the filler items were varied by exactly one dollar, and the average price of the filler items (i.e., the midpoint between the higher and lower prices) was \$4.34. Use of this midpoint for the computation of percent change (Samuelson 1980, p. 361) indicates that there was a 23% change in price. A similar calculation indicates that a 49% change in demand was associated with this price difference. This yields a price elasticity estimate of -2.13, which is quite typical of the price elasticities found in the food industry (e.g., Ghosh, Neslin, & Shoemaker 1983).

The surprise recall test was designed to check whether or not the manipulation of menu length was effective in determining the amount of attention the subjects would pay to each menu item; if less attention was paid to the items in the long menus, then recall should be poorer. Measuring recall as the percent of prices exactly correct, the mean for the short-menu subjects was 53.3% and the mean for the long-menu subjects was 52.7%. The difference between these means was not statistically significant ($t[173] < 1$). Further, the menu length manipulation was expected to affect the likelihood of the subjects rounding an odd price up to the even price. If the percent of odd prices which were recalled as the equivalent even prices (i.e., the price five cents higher) is used as a measure of the degree to which odd prices were rounded upwards, the menu length manipulation again appears to have been ineffective. In fact, the long-menu subjects were *more* likely to have recalled an odd price as the equivalent even price than were the short-menu subjects (15.4% vs. 6.2%, $t[171] = 2.29$, $p < .025$).

On the other hand, while the recall results showed the menu length manipulation to be ineffective, a further analysis shows that the long-menu subjects did not, in effect, shorten their menus by considering only the first few alternatives under a heading. The mean item-order of the chosen items was considerably higher in the long-menu condition than in the short-menu condition (5.0 vs. 2.0; $t[183] = 15.17$, $p < .001$). Furthermore, postchoice questioning also indicated that the long-menu subjects did not use some strategy to make their choices as easy as those of the short-menu subjects. On a 4-point scale with 1 being "easy" and 4 being "difficult," the long-menu subjects rated the task as being more difficult than did the short-menu subjects (1.8 vs. 1.4, $t[183] = 3.55$, $p < .001$).

¹A slightly different, earlier version of this scenario was used for the first 86 subjects.

Effects of Price Ending on Choice

To determine the effects of price ending on choice, the number of odd-priced items chosen and the number of even-priced items chosen was computed for each subject. Each of these numbers could be between 0 and 5 (since the experiment concerned the choices in each of five courses of a meal). However, the number of odd-priced items and the number of even-priced items chosen need not add up to five, because the subjects sometimes chose filler items².

It should be emphasized that no subject saw the same item with *both* an odd and an even price ending. However, each item that was odd-priced in the A version of a menu was even-priced in the B version of that menu (and vice versa). Since half of the subjects received A versions of a menu and the other half received B versions, a greater overall tendency to choose odd-priced items could not be due to the particular items involved. Rather, it would mean that a particular menu item would be more likely to be chosen when it was seen with an odd price than when it was seen with the equivalent even price.

The mean number of odd- and even-priced items chosen from the long and the short menus can be seen in the Table. In both menu conditions, items were more likely to be chosen when they were odd-priced than when they were even-priced. However, this odd pricing effect was not larger for the long menus than for the short menus. A two-way analysis of variance was run on these data. The number of choices made by each subject was the dependent variable, the price ending of the chosen items was a within-subjects independent variable, and the menu length was a between-subjects independent variable. This analysis indicated that the main effect of price ending was significant ($F[1,183] = 7.56, p < .01$), the main effect of menu length was not significant ($F[1,183] = 1.06, p < .4$), and the price-ending by menu-length interaction was not significant ($F[1,183] < 1$). Thus, H_1 was supported, but H_2 was not.

Table
Mean Number of Odd- and Even-Priced Items Chosen
From the Short and Long Menus

Price ending	Short menu	Long menu	Mean
Odd priced	2.16	1.99	2.08
Even priced	1.68	1.70	1.69
Difference	0.48	0.29	0.39

It should be pointed out that this greater likelihood of an item being chosen when it is odd-priced *is* an odd-pricing effect, as opposed to resulting simply from the fact that the odd prices were five cents lower than the equivalent even prices. Considering that the mean price of a nonfiller menu item was \$5.50, the average increase in demand due to odd pricing yields an estimated price elasticity of -23.0. This is an order of magnitude more extreme than the price elasticity computed from the one-dollar price changes in the filler

²In fact, the total need not add up to five even if the chosen fillers are added in. This is so because a minor design error made it necessary that some of the filler items be excluded from the analyses.

items and indicates a greater price elasticity than is usually seen in consumer products. Such a greater-than-expected price elasticity around prices which are just below a round number is in fact a technical definition of the odd pricing effect (e.g., Georgoff 1972, pp. 6-7).

If one uses the short-term recall results of this study as a measure of the level the subjects perceived the prices to be, it could be determined whether or not this greater-than-expected price elasticity is due to the subjects perceiving this five cents difference as a much larger difference. These results indicated that the average odd price was recalled as being 8.1 cents less than it actually was, and the average even price was recalled as being 0.4 cents more than it actually was (these recalled-actual price differences were not significantly different, $t[184] = 1.47, p < .2$). Thus, there is not evidence from the recall data in this study that prices which are only slightly below a round number are perceived as being substantially below the round number.

One additional analysis was conducted in order to further explore the lack of the hypothesized interaction between the odd pricing effect and menu length. This analysis tested the possibility that the results were distorted by those subjects who found the scenario less than fully plausible. A perceived plausibility scale created from the postchoice questions on the topic was added to the two-way analysis of variance as a third independent variable. While there was a tendency for the subjects who found the scenario more plausible to show a larger odd pricing effect in the long menus than in the short menus, this price-ending by menu-length by perceived-plausibility interaction was not significant ($F[1,179] = 1.27, p < .3$).

Discussion

This study provides clear evidence that pricing an item just below a round number can increase its likelihood of being chosen to a greater extent than would be expected on the basis of the few pennies involved. This finding may not be *surprising*, because many have long believed that odd pricing has just such an effect. However, this finding is *important*, because of the shortage of published evidence that this belief in odd pricing is justified.

Although this study was successful in producing an odd pricing effect, it was not successful in yielding information about the role attention plays in mediating the occurrence or the size of the effect. The failure of the menu-length manipulation to affect the size of the odd pricing effect is inconclusive, since the recall results raised questions about whether this manipulation was effective in producing differences in attention. It has been pointed out (e.g., Thaler 1986) that subjects who are paid for accuracy in experimental tasks typically do not perform any better than subjects who are not paid for accuracy. This suggests that perhaps the mere agreement to participate in an experiment leads subjects to, when necessary, expend considerable effort in the task. Such conscientiousness may well have elicited in the subjects of this experiment enough processing capacity to attend to all the digits of the prices of even 58 menu items over the course of a minute. Thus, the role of attention load in the odd pricing effect remains a topic for future research.

Although this study was not successful in providing evidence for the role of one situational variable, the amount of attention allocated, the study was successful in demonstrating a pronounced odd pricing

effect. Why was a consistent odd pricing effect found in this study and not in several previous studies? Consideration of the ways in which this experimental situation differed from that of previous studies suggests some other situational variables which may mediate odd pricing effects.

In this study, the subjects were asked to choose among alternatives, some of which were odd-priced, some even-priced, and some neither. In previous studies (e.g., Dodds & Monroe 1985; Georgoff 1972; Schindler 1984; and Schindler & Wiman 1986), subjects were asked to rate products with either even or odd prices rather than choose among them. Considering that important differences have been found between rating and choice situations, including preference reversals (e.g., Lichtenstein & Slovic 1971; Goldstein & Einhorn 1987), the role of this variable in odd pricing effects is worthy of further research.

Another way in which the present study differs from previous odd pricing research concerns the presence of a social context. The studies cited above do not report presenting a social context in the experimental situation. The scenario used in the present study provided the subjects with a clear social context: a dinner partner who cared about how much was being spent. While this scenario was included to encourage subjects to take price into account, it may have also help produce the odd pricing effect. For example, a consumer who considers all of the digits of odd prices or rounds them upwards when evaluating alternatives may assume that other people do not do so. Thus, when trying to create an impression of being thrifty, the consumer might feel it would be helpful to choose items which are odd-priced. This possibility is in fact consistent with the present finding of an odd pricing effect on choice in the absence of recall evidence that the subjects themselves perceived the odd prices as being substantially lower than the equivalent even prices.

Thus, this study provides some evidence for the existence of an odd pricing effect and serves as a starting point for research on the situational variables which play a role in affecting when such an odd pricing effect will occur and how strong the effect is likely to be.

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Appendix
Description of Dining Scenario and Instructions for the Experiment

Please imagine yourself in the following situation:

You are the Midwest Regional Sales Director for a medium-sized manufacturing firm based in Boston. Sales for last quarter were down 10 percent. Ever since this news was made public, you've noticed the home office is paying much closer attention to your expense reports, questioning items they used to ignore and balking at charges they feel are excessive. There is talk around the office that a number of expense-cutting policy changes are in the works, but nothing has been announced yet.

Mr. Warner, the company president, is in town on business supposedly unrelated to the policy changes. You were scheduled to meet with him at 4:00, but he has been tied up in meetings all day and is running late. When he finally does emerge, it is well into dinnertime, and he suggests you get a bite to eat.

You and he decide to go to his favorite Chicago restaurant. Mr. Warner is picking up the tab, and he insists you order a full course meal. In light of the potential subject matter (cutting expenses), you don't want to appear frivolous, but also want to accommodate his request by ordering a full meal.

In this restaurant, a full meal has five courses and requires you to choose one item from each of the following categories:

- | | |
|--------------|-------------|
| 1. Appetizer | 4. Entree |
| 2. Soup | 5. Dessert |
| 3. Salad | 6. Beverage |

Mr. Warner is quite hungry and is anxious to eat. Since the waitress is currently at the table next to yours, you must make your decision quickly.

We are interested in your choices only, so please do not discuss them with your neighbors or pay any attention to the choices they are making.

Please do not start until I tell you to, as you will be timed. You will have exactly *one minute* to make your selections. Are there any questions?

Coupons Behaviors of the Market Maven: Profile of a Super Couponer

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ABSTRACT

This paper examines the shopping and couponing behaviors of market mavens, individuals who have information about many products, places to shop, and markets, and provide other consumers with market information. Results suggest that market mavens are "smart shoppers". They budget their expenditures, use lists, and plan their purchases using advertising. In addition, they are heavy coupon users and are very active in providing coupons to others. The implications of these behaviors are discussed.

INTRODUCTION

An important recent finding in the sales promotion literature is that heavy couponers account for a large proportion of total coupon redemptions (Kingsbury 1987). However, attempts to identify relationships between demographic, socioeconomic and/or personality characteristics and deal proneness have not been very successful (Frank et al. 1972; Kingsbury 1987). Moreover, almost no research has examined coupon usage behavior from the consumer's perspective (Shimp and Kavas 1984). The purpose of this research is to examine a group of consumers—market mavens—who are likely to be heavy coupon users.

The concept of the market maven has been defined and discussed in previous research (cf. Feick and Price 1987; Higie, Feick and Price 1987; Price, Feick and Higie 1987). Market mavens are defined on the basis of both their general marketplace expertise and their active diffusion characteristics. They are individuals who have information about many kinds of products, places to shop, and other facets of markets and initiate discussions with consumers and respond to requests from consumers for market information. Based on previous research, there is ample reason to expect that market mavens are active coupon users and represent a good target for manufacturer and retailer couponing programs. However, while previous research suggests that market mavens are more likely to use coupons when shopping for food and common household products and nonprescription drugs and health and beauty items (Feick and Price 1987), no additional information is available regarding their couponing behaviors. The objective of this paper is to examine market mavens' shopping and couponing behaviors in greater detail. Specifically, this paper focuses on grocery shopping behaviors. The research reported examines grocery shopping planning activities and couponing behaviors including the number and value of coupons redeemed per week. In addition, because an integral part of the market maven concept is the active diffusion of market information to other consumers, the paper examines and discusses market mavens' giving coupons to other people and receiving coupons from others.

BACKGROUND

The past several years have been marked by an increasingly prevalent use of couponing. Estimates suggest that over 2000 manufacturer coupons per household are dropped each year (Workman 1987).

However, some promotion experts contend that couponing is becoming a victim of its own success because of the resultant coupon clutter (Schleier 1985). As evidence of this, they note that the total number of coupons redeemed has not kept pace with the increased number available, and that the coupon redemption rate of virtually every medium measured by Nielsen has declined over the past several years (Schleier 1985, p. 16). An important concern is to find ways of more selectively and effectively targeting coupon/sampling recipients (Schleier 1985). The following sections review research on couponing behavior and market mavens and relate these topics to the present research.

Consumer Coupon Usage

Several researchers have focused on examining the characteristics of the "deal-prone" consumer (Blattberg et al. 1978; Massey and Frank 1965; Montgomery 1971; Shoemaker and Shoof 1977; Webster 1965). An important finding is that a group of heavy coupon users exists and accounts for a large proportion of total coupon redemptions (Kingsbury 1987). Attempts to describe the deal prone consumers have been less satisfying. Recent research found that the only significant demographic distinction was a lower incidence of female heads of households employed full time (Kingsbury 1987). Most of the research attempting to identify the deal prone household has indicated, at best, only a very modest relationship between demographic, socioeconomic and/or personality characteristics and deal proneness (Frank et al. 1972). Implicit in many models of deal proneness is the idea that deal proneness should depend on the resources of the household (cf. Blattberg et al. 1978). For example, working women should be less deal prone than non-working women because of the effect that working has on available time. A similar relationship should hold for families with children -- such families should be less deal prone because of the impact on time. Other variables, such as income, should be inversely related to deal proneness because of their impact on the rewards from dealing. These models of household resource allocation have received only limited empirical support (Blattberg et al. 1978; Nguyen 1986).

Shimp and Kavas (1984) note that almost no research on dealing has examined coupon usage behavior from the consumer's perspective. Their work attempts to suggest how consumers perceive various costs and rewards from redeeming coupons. This research suggests that an important motivation for coupon redemption is the feeling of being a thrifty and smart shopper. This finding is consistent with work by Schindler (1984) who, using a "miniature market" research method, found a smart shopper mechanism operating in coupon usage. That is, consumers give themselves credit for obtaining a lower price and this attribution leads to desirable feelings that motivate the purchase. The evidence Schindler has compiled suggests that the personal action of getting a low price via a coupon provides a feeling of effectiveness and of winning that is more rewarding than an equivalent sale price. He notes two important aspects

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of this finding. First, coupon users don't admit that they are actually influenced by coupons--to win they must believe that they are using coupons for items that they would have purchased anyway. Second, if feelings of effectiveness and accomplishment are important rewards of coupon use, then consumers with greater than average needs for these feelings would be expected to be more responsive to promotions.

Zeithaml (1985) provides a differing perspective on coupon usage. She uses role theory to provide an explanation for supermarket shopping behaviors including attitudes toward grocery shopping; the extent of planning, information usage, budgeting; and extent of economizing (e.g. checking prices and using coupons). She suggests that men may perceive household duties such as being "good supermarket shoppers" as less central to their roles and do less planning such as preparing shopping lists, reading newspaper advertising and clipping and redeeming coupons (1985, p.66). She also suggests that women who work outside the home experience role overload and devote less time and effort to supermarket shopping (Strober and Weinberg 1980). Role theory is used to explain the effect of income on supermarket shopping. Zeithaml (1985) contends that the higher the income, the lower the need to perform the "good shopper" role. The empirical results provide support for Zeithaml's role theory approach. A common theme in the work of Schindler (1984), Shimp and Kavas (1984), and Zeithaml (1985) is the importance of the "good shopper" motivation in understanding supermarket shopping behavior and deal proneness.

Market Mavens

Recent literature on shopping behavior suggests that certain individuals feel obligated to be informed about the marketplace and that purchasing is particularly relevant for these individuals (Feick and Price 1987; Gultinan and Monroe 1980; Kassarian 1981; Slama and Tashchian 1985; Thorelli, Becker and Engledow 1975). That is, being a "good shopper" is central to their roles. The concept of the market maven includes general marketplace interest and expertise and influence over other consumers. Market mavens enjoy shopping, they initiate discussions about shopping and they respond to requests for shopping information from other consumers (Feick and Price 1987). The market maven concept is related to early awareness of new nondurable products and search activities such as readership of *Consumer Reports*. Research has shown that market mavens are particularly attentive to media (Higie, Feick and Price 1987). For example, they are much more likely to read both direct mail advertising and local direct mail classified newspapers than are nonmavens; and there are substantial differences between women mavens and women nonmavens in their likelihood of reading homemaking magazines. These media patterns of mavens can be used to effectively target them with promotional materials. Finally, market mavens are distinguished by their greater participation in market activities, couponing and reading advertisements (Feick and Price 1987, Higie, Feick, and Price forthcoming). Previous research has suggested that market mavens are somewhat more likely to be female. This is consistent with the idea that general shopping as an important role may be less central to men. This is not to say that men may not be involved with and active in shopping for particular products such as automobiles, stereos, etc.

(Feick and Price 1987). However, no other demographic characteristics differ for the market maven.

The relationship between market mavens and deal proneness has not been examined. Because market mavens take shopping seriously, a strong relationship between market maven scores and grocery shopping behaviors is expected. Specifically, we expect market mavens to engage in more extensive preplanning behaviors such as using shopping lists, grocery budgeting and reading advertisements when planning purchases. Moreover, market mavens are expected to make extensive use of coupons. That is, market mavens are expected to use a larger number of coupons, use coupons on a higher percentage of their shopping trips and report higher savings from coupons. Finally, because market mavens provide marketplace information, they are expected also to clip coupons to give to other consumers. Coupon "exchange" has not been explored in previous research on couponing, but may have important implications for marketers.

METHOD

Survey

Sample. Survey data were obtained by telephone interviews with a sample selected by random digit dialing. Interviews were conducted during the last week of January 1987 with residents of a northeastern metropolitan area. The sample was a follow up study of individuals contacted in April 1986. Details on that study are included in Higie, Feick and Price (1987). In the 1986 study, 303 interviews were completed for a response rate of 67 percent. In the follow up study, only 259 respondents could be recontacted. Of these, 213 agreed to be interviewed a second time. It is the responses of these 213 individuals that are reported here. Demographics of the respondents closely match 1980 county census figures for the metropolitan area.

Measurement. Respondents to the study reported on a set of shopping and couponing behaviors and demographics, and were administered the market maven scale from Feick and Price (1987). The scale measures perceived general marketplace knowledge and information diffusion characteristics and includes six items. To form the scale, the scores on the items were summed. In the Feick and Price (1987) study, the market maven scale had a mean of 25.6 and a standard deviation of 8.5, and a trichotomization of all respondents categorized them as low (31%), medium (37%) and high (32%). Because of the consistency between the measurement characteristics of the market maven in this study and the Feick and Price study, we classified respondents using the cutoff points developed in the earlier study. Based on the respondent's score on the market maven scale, each respondent was classified as low (29%) medium (37%) or high (34%) on the scale. Following the convention of previous studies, individuals in the high market maven score group will be referred to as market mavens. Demographic characteristics of the market maven groups are reported in Feick and Price (1987), Higie, Feick and Price (1987), and Price, Feick and Higie (1987). In summary, the groups do not differ significantly on demographic characteristics except sex - market mavens are most likely to be female.

Qualitative Data

To provide more depth on the shopping and couponing behaviors of market mavens, we supplemented

the survey data with qualitative data based on interviews with ten individuals qualifying as market mavens on the market maven scale. Four of these individuals were interviewed together in a focus group format, while the six remaining interviews were conducted separately. The discussions from these interviews provide a richness of detail that was impossible to obtain in the survey.

RESULTS

Preshopping Activities

The 213 respondents to the survey were asked a screening question about their participation in grocery shopping. Only the 174 respondents who indicated some responsibility for grocery shopping are included in the analyses.

In Table 1 we report the one way analysis of variance examining differences in shopping planning across the three market maven groups. We used three items taken from Zeithmal (1985), (i.e., uses shopping list, budgets groceries and plans shopping with ads). The items are measured on seven point scales anchored with never (1) and always (7). Mean use of a shopping list is high and does not differ across the groups. On both budgeting an amount to spend on groceries and on using newspapers or direct mail ads in planning purchases, however, market mavens reported more frequent activity.

TABLE 1
Means on Shopping and Couponing Behaviors by Market Maven Groups

Variable	Market Maven Groups			F
	Low	Medium	High	
Uses shopping list	5.2	5.2	5.5	0.47
Budgets groceries	2.8	3.2	4.1	3.94*
Plans shopping with ads	2.8	3.3	4.6	10.22**
Percentage of trips using coupons	42	50	67	6.90**
Number of coupons used per week	4	5	10	7.80**
Value of coupons used per week (\$)	1.67	2.2	4.21	10.41**
Number of coupons given per month	5	16	20	5.36**
Number of coupons received per month	3	7	11	2.19

* $p < .05$

** $p < .01$

These results on market mavens' more extensive planning and involvement in preshopping processes are substantiated in the qualitative data. Almost all interviewees used a list all of the time for grocery shopping. The lists were very organized, most were categorized by different product types, or even sorted according to the aisles in the store. One interviewee remarked, "I try to picture the store and think what aisle is first and go according to the store." In addition to a list, several interviewees constructed weekly menus and then "drew the list from the menu."

Budgeting also showed up in the interviews as an important facet of grocery shopping. One member

summarized the thoughts of the focus group on grocery expenditures, "Out of all the bills you have to pay on a monthly basis, here's one area (grocery shopping) that you can save something. (Grocery shopping) is something in the budget, you can't avoid it, you can't leave it out, (it's) a challenge to try to save something -- it's a game." One interviewee attributed her budgeting and consumer skills to her mother. "My mother was always like that, with 6 children (she was) excellent at budgeting and I watched her do it. Growing up it got on my nerves, but now I think she should write books. We were taught to be frugal and taught the importance of money."

All of the focus group participants agreed that they used the store's advertisements to plan their purchases. The typical procedure was to "go through the ads in the flyers and see what's on sale and then check the container of coupons. I write on the newspapers and attach the coupons to the newspaper so I am prepared when I go into the store." This planning using advertising sometimes changes the timing of purchases. For example, one participant noted that she had planned to buy sugar, but picked up the following week's ad and saw that sugar would be on sale during the next week. She decided to wait a week.

To several respondents, grocery shopping was more than a household chore, it was a social event. "I go Saturday afternoon when all working moms go. I see all my friends. I see a lot of people. We're all there at the same time." The crowds shopping Saturday afternoon and the hours spent at the store do not discourage this shopper because to her "it's a social thing."

Couponing Behaviors

In Table 1 we also present the one way analyses of variance of the survey respondents examining couponing behaviors compared across the three market maven groups. There are dramatic and significant differences by market maven groups for the percentage of trips using coupons, number of coupons used per week, and value of coupons used per week. Market mavens use coupons for about two-thirds of their grocery trips compared to the roughly forty and fifty percent of the low and medium groups. On average, market mavens redeem twice as many coupons per week and save about twice as much as nonmavens. The ten coupons per week redemption rate for mavens is comparable to the eight coupon per week redemption rate of "heavy coupon users" described by Kingsbury (1987), who analyzed Burke data from 1985.

Traditional resource expenditure and benefits models examine couponing using variables such as the presence of children, household income, labor force participation, education and household size as predictors. To examine the effect of the market maven score on couponing while controlling for the variables used in the traditional resource expenditure and benefits model, we ran regressions on the three coupon use variables (i.e., percentage of trips using coupons, number of coupons used per week and value of coupons used per week). To maintain comparability with the economics literature we limit the analyses to female respondents; inclusion of labor force participation as a predictor variable does not make sense, in general, for men. The results, reported in Table 2 emphasize the importance of the market maven characteristic in influencing couponing behaviors. In all three equations the maven score was a significant predictor of coupon activity. The only consistent

predictor from the household resource model was household size which was significant in the expected positive direction in all three equations. Fit for the models varied from $R^2=.13$ for percentage of trips using coupons to $R^2=.29$ for value of coupons used per week.

TABLE 2
Regression Coefficients and (t-statistics)
for Models of Coupon Use

Independent Variable	Dependent Variables		
	Percentage of trips Using Coupons	Number of coupons Used per Week	Value of coupons Used per Week
Presence of Children (dummy)	-10.95 (-1.03)	1.44 1.3	0.05 (-.10)
Household Income (\$)	-.000044 (-.21)	.00008 (2.09)*	.00000037 0.03
Labor Force Participation (dummy)	2.67 0.36	-1.18 (-1.52)	-0.29 (-.77)
Education (years)	-2.22 (-1.41)	-0.29 (-1.78)	-0.08 (-.98)
Household Size (number)	7.77 (2.27)**	0.62 (1.77)*	0.64 (3.70)**
Market Maven Score	1.05 (2.86)**	0.11 (2.88)**	0.07 (3.44)**
Constant	41.68	3.34	0.16
F	2.81**	6.24**	7.05**
R-Square	0.13	0.26	0.29
N	118	112	113

*p < .05
 **p < .01

Market mavens' extensive use of coupons and their coupon evaluating, gathering and organizing are given more texture if we examine the individual and group interviews. All of the interviewees used coupons. The range of weekly savings was \$6 to \$15. One person claimed, "I emptied a box of Tide last week because there was a .40 coupon for Crisco inside and the store had a sale for \$1.69 on Crisco which would take it down to \$1.29. I tried to find something big enough to put (the Tide) in. Why did I do this for .40?" This same person reported buying a second Sunday paper just for the free standing inserts, and reported saving over \$10 with these coupons.

Each coupon clipper had a favorite savings story to tell in which, for example, "\$5.00 worth of stuff (was purchased) for a quarter." "You hit it lucky, (you have a coupon) and something's on sale." These instances were described as "a gift from God, for all this trouble-- this is your reward for doing it, (your incentive) to keep it up." In fact, many claim they "never pay full price for an item." When double coupons are used for items on sale,

one "can really clean up." One market maven voiced the sentiments of most when she stated, "I'm really addicted to double coupons." Triple coupons get everyone fired up. One maven found out about triple coupons from another shopper while in the store. "I almost knocked her over. Then I went like a mad women; I bought things I didn't plan on."

Market mavens seem to focus on brands they currently use or new products they want to try in clipping coupons. "If it's a product I need and I think I'm going to use it, I clip it." On new products, mavens see the coupons as "an incentive to try the product." "If I have a coupon, I don't mind if I lose a couple of pennies on it, I just wanted to try it because it's new."

Some market mavens had an organized system for filing their coupons. They grouped coupons into product classes, using about 15 categories. The typical system had a large box or container of thousands of coupons stored at home. A smaller, purse sized carry along organizer was kept in the car for shopping trips.

To market mavens, coupon utilization is more than just a matter of saving money. To them, couponing is "a challenge... to see how much you can save." "It's a game." "A hobby." "It feels good". The time devoted to couponing did not seem significant to market mavens. Most saw clipping coupons as something to do while watching television, something that didn't interfere with leisure time. The act of clipping coupons appeared natural and "second nature." Interestingly, it was difficult for market mavens to comprehend any reasons for why people would not clip coupons. One maven encouraged her neighbor to begin saving coupons, "I got him into clipping coupons, now he's worse than I am."

Coupon Giving and Receiving

Another example of the market maven's involvement in couponing is their giving and receiving of coupons. Included in Table 1 are survey results on the mean number of coupons given and received per month by the market maven groups. Once again, market mavens are involved more heavily than other consumers. On average, market mavens gave four times as many coupons as individuals in the low group. Differences among the groups in number of coupons received were not significant, but again suggest greater involvement of market mavens.

Once again, the survey results are enhanced by the qualitative data. The interviewees were active coupon givers and receivers. One university employee gives and receives coupons through the campus mail. Another said, "I get most of my coupons from a friend." What's unique is that her friend has moved away, but still mails her coupons across the country every week.

To one women, exchanging coupons was a major social event. She swaps coupons after church every Sunday in the church parking lot with eight to ten people. School functions appear to be another common coupon trading situation.

Often, mavens save coupons for products such as baby items or pet products for friends and family who need these things. "I give all of the baby food coupons to his mom. My mom has a dog and cat so she gets all the pet food. My mother-in-law uses coffee so I save her coupons. I have little packets on the refrigerator. I put them up with magnets--this one's for mom... when I see them I give (the packets) to them." One market maven remarked, "It seems sacrilegious not to cut coupons for others." It appears that some market mavens are even

building coupon networks. One person reported giving pet food coupons to a friend who gives them to her sister because the sister has 5 cats and 2 dogs.

DISCUSSION

In part, the results of this study simply serve to provide a richer picture of the behaviors of the market maven. Previous discussions of the market maven have noted that compared to nonmavens, these individuals are more active in information seeking and provision, are aware of new products sooner, enjoy shopping more, use coupons more frequently, and are more likely to read ads because of curiosity and because ads are good sources of information about new products. The present findings elaborate this list of behaviors.

Market mavens are more likely to engage in "smart shopper" behaviors. They are more likely to budget their grocery expenditures, to use advertising to plan their purchases, and to use coupons and take advantage of sales when shopping. The qualitative data suggest that market mavens appear to view grocery shopping as a challenge in which the objective is to obtain the most for the least. This game involves planning, purposive shopping, and the use of coupons--preferably in combination with special sales. This picture of the market maven ties in quite well with the views of Shimp and Kavas (1984) and the work of Schindler (1984) on the smart shopper motives for coupon redemption. In their work, the feeling of being thrifty, of being a smart shopper, of beating the system emerge as important reasons for the use of coupons. In this paper, we focus on the relationship between market mavens and "good shopper" behaviors. Future research could explore the extent to which the massive growth and use of coupons may have led to higher incidences of this type of shopper.

Market mavens appear to be a group of consumers who feel the need to be a smart shopper (or who feel greater rewards from being a smart shopper) more than other individuals. Although further research is needed to substantiate the relationship between the smart shopper motives and the market maven, it is clear that the smart shopper motive in mavens does not derive from economic necessity. As noted previously, market mavens cannot be distinguished on demographic characteristics except gender.

An integral part of the market maven concept is social activity. That is, mavens are not just knowledgeable about markets but are involved in telling others about products, places to shop, sales, and so on. It is not surprising, then, that some of the behaviors described in this paper occur in social contexts. Some market mavens described their grocery shopping or coupon clipping as a social event--an activity they participate in with friends. In previous research, the social nature of mavens is demonstrated, in part, by their helpfulness in the provision of market information to others. This helpfulness is also demonstrated by their provision of coupons to others.

Market mavens are much more likely than nonmavens to give coupons to others, and this appears to be more common for certain product categories (such as pet and baby products) than for others. It appears that sometimes this giving occurs in social exchanges--the church group described earlier, for example. For others, coupon giving may occur more indirectly, for example, through the mail. Nevertheless, the individuals who were interviewed seemed to agree that it was somehow their

duty to provide coupons to others. Indeed, the interviewees happily volunteered advice on how to be more effective in clipping and redeeming coupons.

Clearly, the giving of coupons and motivations for this behavior need further research. For example, research could explore the incidence of coupon swapping across product categories and the extent to which these exchanges lead to changes in friends' or market mavens' brand loyalties. Even at this early stage, however, the implications of coupon giving are profound. If giving of coupons is prevalent, manufacturer and retailer targeting of coupons through particular media choices is undermined. For example, if manufacturers are trying to target non-users of their brand, but those non-users pass the coupon to a regular user, the intent of the manufacturer has been circumvented. In addition, coupon giving has implications for control and evaluation of sales promotion programs. Manufacturers who target consumers and evaluate effectiveness with redemption rates assume the targeted consumers actually redeem the coupons. Our results suggest redemption rates will provide a misleading measure of effectiveness. Recent proposals for targeting competitor brand purchases with coupons issued at check-out would be just as vulnerable. Redemption rates, which would be interpreted as measures of the coupon's impact on brand switching, would be inflated by redemption by current users who have received their coupons from others. Of course, if information exchange about product attributes and reasons for brand loyalty is also involved in "swapping parties" then there may be important unidentified advantages to coupon promotions.

We agree with Shimp and Kavas (1984) that consumers' perceptions of their coupon usage behaviors is basically an unexplored area. There are obvious limitations to the current study that make it difficult to generalize the results of this study. For example, the qualitative data are based on a small number of in-depth interviews and provide only a partial and not necessarily representative picture of couponing behavior. Moreover, the qualitative data focused only on market mavens. Future qualitative research could usefully contrast market mavens and non-mavens in terms of motivations and patterns of couponing. The survey data are also limited in several respects. Although market maven score as a predictor variable compares favorably in terms of predictive power with variables common to household resource models, the total variance in couponing behavior explained remains reasonably small. Future research could integrate the market maven variable into product specific couponing models and models that include manufacturer and retailer variables. Nevertheless, results of this research suggest that coupon use reflects far more than household economic circumstances and time resources. Many consumers view couponing as an important reflection of their frugal values and background. Moreover, these consumers see couponing as an important way that they can exercise control and win in the marketplace. There seems to be a sense of "us" against "them". Market mavens are not just interested in winning themselves, but also in helping other consumers to win.

Finally, perhaps more than in many other areas of consumer behavior, couponing for some seems to be an example of an elaborate and well-articulated, individualized system for purchasing. Bettman and Zins (1977) note that a neglected area of inquiry is the exploration of consumers' articulated heuristics or rules

for search and decision making. The qualitative results of this research suggest that consumers have rules for what they clip, where they clip, how they store coupons and rules for how the coupons are redeemed. More research is needed to elaborate and generalize these results.

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Consumers' Knowledge of Supermarket Prices: The Effects of Manufacturer and Retailer Promotions

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Abstract

This paper extends and clarifies previous research into consumers' price knowledge in three main ways. First, it explains why manufacturer couponing and retail dealing might be expected to have opposing effects upon consumers' price recall accuracy. Second, it re-analyzes three previous studies of consumers' price knowledge and shows that these results can be interpreted in a more meaningful fashion once one recognizes the aforementioned effects. Finally, it examines a number of other factors which are expected to affect consumers' price knowledge and suggests directions for future research.

Introduction

In recent years a number of studies have investigated consumers' awareness of grocery prices (Zbytniewski 1979, Conover 1986). However, the only consistent findings are that consumers are not as cognizant of exact prices as one might expect and that demographic variables are very poor predictors of consumers' price recall accuracy (Shilliff 1975). In the absence of testable research hypotheses, these "exploratory" studies ultimately contribute little beyond their methodological guidance and descriptive details. Also disappointing is the lack of any framework for explaining the systematic variation in consumers' price knowledge across product categories.

Fortunately, a more problem-oriented study by Albion (1983)¹ provides a useful perspective and some indirect empirical evidence concerning factors that may affect price knowledge. In a comprehensive study of one supermarket chain, he found this retailer took significantly lower gross margins on brands that were more heavily advertised by manufacturers (controlling for turnover, shelf space and other relevant economic factors). Albion then inferred that grocery retailers appear to set prices as if consumers have better price knowledge of these heavily advertised items and discussed these findings in terms of the expected costs and benefits to the consumer of acquiring price information. For example, the heavily advertised brands tend to be available at more stores. Therefore, consumers have greater opportunity to learn these prices (i.e., lower cost of obtaining price information); likewise, the widespread availability of these brands provides an incentive to learn their prices in as much as they can be used to compare stores' overall price levels (i.e., greater benefit of price information). In view of these suggestive findings and the fact that no study to date has used a cost-benefit approach to examine consumers' price knowledge, we attempted to test the usefulness of this perspective.

¹Albion based his study on George Stigler "The Economics of Information," *Journal of Political Economy*, 69 (June), 213-225.

The Effects of Promotions on Consumers' Price Knowledge: Manufacturer Couponing and Retail Dealing

Extending Albion's reasoning from advertising to promotion, one might expect that consumers would have greater price knowledge in product categories, that are heavily promoted by the *retailer*. That is, frequent price discounts, advertised price specials and use of shelf displays alert consumers to the potential for price savings in those categories. Given that most consumers will take the time to check prices in only a small number of product categories, frequently discounted categories seem more likely to receive such attention (Wells and Lo Sciuto 1966, Dickson and Sawyer 1986). Therefore, one hypothesis to be examined is:

H1: Consumers' price knowledge is directly related to the percentage of product category purchases which are made "on (retail) deal".

Interestingly, a contrary effect may result from manufacturers' promotions. Unlike retail price promotions, manufacturers' coupons may reduce the consumer's incentive to examine retail prices. Since the magnitude of the price savings offered by most manufacturer coupons dwarfs the price differences between most brands or the size of most retail price deals, consumers may (wisely) minimize the time spent learning prices in categories where coupons are often available. Some previous research also supports this idea. Dickson and Sawyer (1986) reported that one reason which consumers gave for not examining prices was that they were using coupons. They also speculated that the place of decision may affect price recall. With coupons, the purchase decision may occur at home where price information is unavailable. Therefore, the second hypothesis to be examined is:

H2: Consumers' price knowledge is inversely related to the percentage of product category purchases which are made with a manufacturer's coupon.

Other Factors Affecting Consumers' Price Knowledge

The relations between consumers' exact price knowledge and several additional factors are also examined. In each case a speculative hypothesis is advanced and the underlying rationale is delineated below. For example, a third factor that might affect consumers' ability to recall the price of a specific item is the degree of brand loyalty in each category. Predicted here is that consumers who are loyal to a specific brand have greater incentive to learn the price of that brand. Moreover, incidental learning of that item's price is likely to be greater with repeated exposures. On the other hand, one might argue that brand loyal purchase behavior reflects a low degree of price sensitivity and will therefore be inversely related to price recall accuracy. That is, consumers who consistently purchase a particular brand are willing to forgo price discounts

that are available on competing brands at the point of purchase.

H3: Consumers' price knowledge is directly related to the degree of Brand Loyalty in each product category.

A related possibility is that consumers' price knowledge will be affected by the extent of brand differentiation in each product category. In "commodity-like", undifferentiated product categories, price will be a more important attribute to consumers. Consequently, more attention to price will be warranted and price knowledge will be greater. In this study, the market share of private label brands (i.e., store and generic brands) is used as a proxy for the degree of differentiation present in each product category. Our expectation is that private label penetration will be greatest in product categories in which product differentiation is least.

H4: Consumers' price knowledge is directly related to the Private Label Penetration in each product category.

Another factor that increases the benefit of learning price information is the amount of money that the consumer spends in the product category. In this study the measure employed was the Average Dollar Purchase (i.e., the amount spent in the category on each occasion that the product is bought).

H5: Consumers' price knowledge is directly related to the Average Dollar Purchase in each product category.

One factor that makes it more costly for consumers to learn prices is the Number of Items in a product category (i.e., the number of brand-size combinations). When the Number of Items in a category is large, the less likely it is that consumers will check and learn the prices of any given brand and size, thereby, lowering price knowledge.

H6: Consumers' price knowledge is inversely related to the Number of Items in each product category.

A related factor, which may have an opposing effect upon consumers' price knowledge, is the Brand Concentration Ratio in each category. Presumably, when two or three brands garner the vast majority of sales, these brands will be available at most stores. Consumers will then have greater incentive and lower costs of learning the prices of these brands.

H7: Consumers' price knowledge is directly related to the Brand Concentration Ratio in each product category.

Finally, the frequency of product purchase is important for two reasons. First, the consumer's ability to recall an item's price will be inversely related to the Purchase Cycle (i.e., average time between purchases). Second, the benefit of knowing an item's price is greater when the product is purchased frequently. (Alternatively,

low priced items may be purchased most frequently leading to less incentive to learn their prices in which case frequency of purchase will be inversely related to price knowledge.)

H8: Consumers' price knowledge is inversely related to the Purchase Cycle in each product category.

Method

Overview

To examine the extent to which the proposed variables could account for the results of previous studies of consumers' price knowledge, suitable measures were required (see Table 1). The 1983 Market Fact Book, which was available to the authors, contained most of the information pertinent to the predictor variables (e.g., proportion of category sales made with a manufacturer's coupon). Additional data (e.g., number of items per product category) were obtained from Progressive Grocer Annual Reports.

TABLE 1
CATEGORY VARIABLES: DESCRIPTIVE STATISTICS

CATEGORY VARIABLE	MEAN	STD DEV
RETAIL DEALING (% of Category Sales During Shelf Price Reductions)	24.3%	11.5%
MANUFACTURER COUPONING (% of Category Sales With a Coupon)	11.5%	6.5%
BRAND LOYALTY (Switching Constant)	.132	.071
PRIVATE LABEL PENETRATION (Share of Market)	18.2%	19.3%
AVERAGE DOLLAR PURCHASE (Average Amount Spent Per Purchase Occasion)	\$1.77	\$.88
NUMBER OF ITEMS* (Number of Stockkeeping Units)	62.5	48.2
BRAND CONCENTRATION RATIO (Herfindahl Index)	1489	1449
PURCHASE CYCLE (Average Days Between Purchases)	47.7	15.7 days

Sources: *Market Fact Book 1983*

**Progressive Grocer Annual Report 1983*

Given this data base and the likelihood that some of the key variables (e.g., manufacturer couponing) would vary dramatically over an extended time period, it seemed reasonable to restrict this re-analysis to three studies conducted since 1979 (Zbytniewski 1980, Dickson and Sawyer 1986, Conover 1986). In Dickson and Sawyer, shoppers were asked to state the price of the item that they had just selected. Conover asked shoppers about items in their shopping carts at times ranging "from several seconds to perhaps 20-30 minutes" after selection. Zbytniewski asked shoppers to play a version

of the "Price Is Right." Only the results pertaining to products which the shopper reported using were included herein. While these studies differed somewhat in method and results, consumers' exact price recall accuracy was assessed in the store in each case. Consequently, this measure served as our criterion variable.

Criterion Variable:

Across the three studies, there were measures of consumers' price recall accuracy of the brand(s) purchased in twenty-seven product categories. The percentage of consumers who correctly recalled the exact price is our operational measure of price knowledge in each product category².

Predictor Variables:

The eight predictor variables are fairly straightforward and only two require clarification (see Table 1). Brand Concentration is measured by the Herfindahl Index; that is, the sum of the squares of the market shares of the three leading brands. The Brand Loyalty measure was created by transforming each brand's market share and repurchase probability into a conventional measure of brand switching and then aggregating the brands to form a product category level measure³.

Analyses and Results

A series of regressions was run to examine the simple relation between each of the predictor variables and consumers' price recall accuracy. In each of these regressions only the predictor variable of interest, along with two dummy variables to adjust for the differences in mean recall accuracy across studies, was included. A complete summary of these results appears in Table 2.

TABLE 2
SIMPLE REGRESSION RESULTS: PRICE RECALL
AGAINST EACH PRODUCT CATEGORY VARIABLE

HYPOTHESIS	CATEGORY VARIABLE PREDICTION	t	p
H1 RETAIL DEALING	+	1.93	.06
H2 MANUFACTURER COUPONING	-	-2.73	.01
H3 BRAND LOYALTY	+	.48	.63
H4 PRIVATE LABEL PENETRATION	+	2.14	.04
H5 AVERAGE DOLLAR PURCHASE	+	-3.41	.01
H6 NUMBER OF ITEMS	-	-2.10	.04
H7 BRAND CONCEN- TRATION RATIO	+	-1.07	.29
H8 PURCHASE CYCLE	-	.39	.70

²Two product categories, were excluded from this reanalysis. The Market Fact Book had insufficient data on Bottled Water. Milk was also excluded due to the fact that there is often only one brand in a given supermarket.

³Since the relationship of Brand Loyalty to Price Recall Accuracy proved to be nonsignificant, the details of this procedure are omitted.

The Effects of Manufacturer Couponing and Retail Dealing

While several significant findings were obtained, the results pertaining to the effects of the two types of price promotion were of greatest interest. Consistent with H1 and H2 proposed above, price recall accuracy was directly related to Retail Dealing ($t=1.93$; $p<.06$) and inversely related to Manufacturer Couponing ($t=2.73$; $p<.01$). Evidently, frequent price discounting by the retailer provides an incentive for consumers to attend to exact price information in that product category. While one might expect manufacturer couponing to have a similar impact on consumers' price vigilance, such is not the case. As noted earlier, manufacturer coupons generally offer price reduction that exceed the usual price differences between brands. Consequently, the consumer who possesses a coupon has little or no incentive to compare prices at the point of purchase - resulting in lesser price knowledge in product categories in which coupons are readily available.

Ideally, one would also like to know whether these results would still obtain if other predictor variables were included in the equation. Unfortunately, the small number of (category) observations does not permit a full multivariate analysis. However, as one check on the stability of these results, price recall accuracy was regressed against both Retail Dealing and Manufacturer Couponing along with the two dummy variables. Once again, price recall accuracy was inversely related to Manufacturer Couponing ($t=2.23$; $p<.03$) and directly related to Retail Dealing ($t=1.32$; $p<.20$). Moreover, this regression accounted for over sixty-five percent of the variance in recall accuracy across product categories and prior studies (adjusted r -squared=.67).

Other Factors Affecting Consumers' Price Knowledge. The remaining hypotheses are now examined beginning with those where significant results were obtained. H4 predicted that the amount of Private Label Penetration in each product category would be directly related to consumers' price knowledge. As indicated in Table 2 ($t=2.14$; $p<.04$), the results were in accord with this hypothesis. Given this (correlational) finding, future research might examine whether the lack of differentiation in a product category actually underlies the observed relationship between price recall accuracy and private label penetration.

H6 proposed that consumers' price knowledge would be inversely related to the Number of Items in each product category. Again ($t=2.10$; $p<.04$), the results are consistent with this hypothesis ($t=-2.10$; $p<.04$).

H5 posited that price recall accuracy would be directly related to the Average Dollar Purchase in each product category. Surprisingly, consumers' price knowledge was significantly negatively related to this variable. One possible account of this result is that Average Dollar Purchase happened to be strongly correlated ($r=.80$) with Manufacturer Couponing in this data set leading to a serious confounding of these effects.

Three null results should also be noted. H3 predicted that price knowledge would be directly related to Brand Loyalty while H8 posited that Purchase Cycle would have a negative effect on price knowledge. Neither of these predictions was supported (see Table 2). However, Purchase Cycle and Brand Loyalty were highly correlated ($r=.67$). Thus, it may be the case that the (observed) net effect of these two variables is negligible.

Last, H7 predicted that price knowledge would be directly related to Brand Concentration. This relationship was weak and in the direction opposite to the prediction ($t = -1.07$; $p < .29$). At present, we are unable to offer an explanation for this result.

Two multivariate analyses were also conducted in order to check upon the stability of the previous (simple) results. One should note, however, that the limited number of observations combined with the inherent collinearity of these variables renders further interpretation of these data highly suspect. First, we focused on the relationships that were consistent with our predictions. Accordingly, Price Recall was regressed against Retail Dealing, Manufacturer Couponing, Number of Items and Private Label Penetration. Each of these variables remained related to Price Recall in the predicted direction but the strength of each relation was reduced below the conventional level of significance.

Finally, a regression of Price Recall against all eight predictor variables was run. None of the regression coefficients was significant in this case.

Discussion

The primary goal of this paper has been to propose and test a framework for explaining the systematic variation in consumers' price knowledge. Although the small sample size, collinearity of the predictor variables and cross-sectional nature of the analyses all suggest that the results be interpreted cautiously, the evidence strongly supported the cost-benefit approach and several of the predicted relationships.

In view of these encouraging results, another study has been designed in which product categories have been selected so that the effects of the two promotion variables will be separable. Future research will then examine whether these factors also affect other forms of price knowledge -- for example, the accuracy of consumers' knowledge of the relative prices of brands within categories or consumers' knowledge of the relative prices of items at competing supermarkets. Evidence concerning each of these questions should lend insight into consumers' marketplace beliefs and shopping behavior. From a managerial perspective the paper also produced some noteworthy findings and raises a number of questions for future research. Specifically, the results which indicate that manufacturer couponing and retail price promotions have significant and separable effects upon consumers' knowledge run counter to both current academic thought and marketing practice.

For example, the conventional wisdom holds that (manufacturer) couponing, unlike advertising, damages the "brand franchise" by increasing consumers' price sensitivity (Strang 1975). The current finding that couponing reduces consumers' price knowledge certainly calls this belief into question. Moreover, another study in progress (Buzas and Weitz 1987) indicates that retailers accept significantly lower gross margins in product categories in which the proportion of purchases made with a coupon is relatively high. Thus, retailers evidently believe that couponing increases consumer price knowledge - contrary to our results.

Finally, several recent papers have questioned the net returns of trade promotion to the manufacturer (Chevalier and Curhan 1976, Hardy 1986). Although these articles generally focus on the problems of limited "pass-through" by the retailer and the escalating costs of promotion incurred by manufacturers in stagnant product

markets, the current results suggest an additional hazard. That is, when trade promotions are in fact translated into retail price reductions, consumers' are being taught to seek out price information in the promoted product category. (Recall that consumers' price knowledge is higher when retail shelf price reductions are more prevalent). One might then speculate that, over time, this sensitization to price promotes brand switching. It may also encourage trial of private label and generic brands to the further detriment of the competing national manufacturers. On a more constructive note, the current study suggests that consumers promotions by the manufacturer (i.e., coupons) may have the opposite effect on consumers' shopping behavior and price knowledge over the long term. As is usually the case, longitudinal research would greatly enhance our understanding of the foregoing relationships, particularly about causation. Does retail dealing increase price knowledge or do retailers deal in categories with high price knowledge?

Though brief and admittedly speculative, the foregoing conjecture was intended to be provocative. Perhaps ideas such as these can begin to bridge the gulf between "basic research" on consumers' price knowledge and the intriguing set of pricing problems on which this research might be brought to bear.

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The Interaction of Coupons With Price and Store Promotions¹

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Abstract

This research investigates two behavioral mechanisms for consumer response to simultaneous marketing stimuli: "coupon primacy" and "lowest price." Under coupon primacy, coupons inhibit consumers from responding to in-store promotional conditions. Under lowest price, consumers choose brands on the combined basis of all available promotions -- coupon and shelf price discounts. Using a logit choice model on scanner panel data for two product categories, the research concludes that there is some limited evidence to support both of these mechanisms -- depending on type of consumer. The less deal-prone exhibit coupon primacy, the more promotion sensitive tend to use a lowest price strategy.

Introduction

Couponing continues its recent popularity in the marketing mix: 1984 coupon distribution increased 14% over 1983 to a record total of 163 billion (Nielsen Clearing House 1985). Yet there are allegations that most coupon promotions are unprofitable (Irons, Little and Klein 1983). In this context, research that can shed light on couponing's effectiveness has become more prevalent. For example, researchers have investigated prediction of redemption rates (Reibstein and Travers 1982, Ward and Davis 1978); the effect of coupons on incremental sales (Hee 1981), purchase acceleration (Neslin, Henderson and Quelch 1985), and brand switching (Dodson, Tybout and Sternthal 1978); coupon profitability (Neslin and Shoemaker 1983; Klein 1981; Irons, Little and Klein 1983); and the identification of coupon users (Teel, Williams and Bearden 1980). Other work has focused on the behavioral issues of why and how coupons can achieve results (Raju and Hastak 1979, Rothchild and Gaidis 1981, Gardner and Strang 1983, and Shimp and Kavas 1984). One important area that is not included in this list is the interaction of couponing with other elements in the marketing mix. Interaction effects are a common belief (for example, Beem and Shaffer 1981) but are not frequently researched.

Interactive effects are particularly important at this time. The tremendous increase in the use of all forms of sales promotion--particularly couponing--has led to a situation popularly known as "clutter." In many categories, coupons are offered so frequently as to be a constant presence in the market. Under these conditions, couponing is no longer an isolated event but one that needs to work at all times with other marketing elements.

Such simultaneous events have implications for the effectiveness of promotion programs. For example, a consumer holding a coupon for a particular brand may be faced with an in-store promotion for the same brand (store displays or special prices, etc.). With the modern tendency toward combining promotional techniques, this

multiple exposure becomes more probable. If these elements reinforce each other this may create a higher probability of choice. In this case, the coupon is more likely to be used and the brand selected because of the availability of an additional inducement. However, if only one element is required to achieve consumer response, the second element may be overlooked. In this case certain types of promotion programs involving simultaneous elements may be highly inefficient.

The objective of this research is to look at two behavioral mechanisms, which might explain consumer response to coupons and other marketing elements. This research is restricted to a particular set of elements defining the shopping environment and includes price, price cuts, special packaging, local newspaper advertising by retailers, and local newspaper advertising by manufacturers.

Literature Review

There are a limited number of studies which have looked at the interaction between forms of promotion or between promotions and other elements of the marketing mix.

The Chevalier (1975) controlled store experiment with eight products finds an interactive effect between display and price reductions in that a combination of the two is most effective in increasing sales. Sunoo and Lin (1978), with a one-product cable panel experiment, find only a minor interaction between promotion and advertising. Woodside and Waddle (1975), again with a single product experiment, find a significant positive interaction between advertising and price specials. The Eskin and Baron (1977) experiment finds an interactive effect of free samples with advertising. Prasad and Ring (1976), also with one product, find an interactive effect between advertising and price. Dennerlein's analysis (1980) of proprietary data concludes that trade promotions are most successful when used in conjunction with other promotional elements. Wilkinson et al.'s (1982) in-store experiment shows that two out of four products studied have an interactive effect between special display and price cuts, while one product of the four has a three-way interaction among display, price, and advertising.

This set of studies appears to show that limited interactions--with respect to displays, advertising and price reductions--are significant in stimulating sales. None of this research, however, has really had the interaction of coupons and other elements as the focus, nor has modeled the manner in which multiple offers should be expected to impact behavior.

Levedahl (1984) has looked specifically at the question of the interaction of prices with coupons. His data show that on an individual brand basis, consumers face higher average shelf prices when they are using a coupon than when they are not. His explanation of this result involves a price discrimination hypothesis: average prices are raised when coupons are offered because non-coupon using consumers, the only ones who will pay full price, are less price sensitive. When coupons are not offered and the market does not self-select into coupon-using and non-coupon using

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segments, average prices must be lowered to reflect a greater average price sensitivity.

Another interpretation can be made of these results. It is plausible that consumers who are preparing to use a coupon are in fact *less* sensitive to shelf price than those who are not. This would occur if the presence of a coupon obstructed the consumer's usual concern with price. In this case, shelf prices would not be used in making a brand selection. Without a coupon, however, consumers would consider shelf price and would tend to select the brand when it was favorably priced.

Two Models Of Coupon Interactions

There are two possible types of interactions between coupons and other mix elements.

Model 1: Coupon Primacy

This model states that coupons have a "primacy" effect in blocking the impact of other purchase influences. There are two related explanations for this effect: precommitment and choice simplification. Under a theory of precommitment, taking advantage of coupons requires a degree of clipping, saving, carrying, and planning, which binds the consumer to a particular brand, regardless of competing offers. Coupons take precedence because the consumer is involved with them prior to store visiting. Thus, consumers may be following a lexicographic choice process in which coupons are the first attribute considered. This attribute is sufficient to determine choice and thus creates precommitment--the choice has been made. Only when this attribute is not relevant (the consumer holds no coupons) are other attributes such as price considered. Note that this model of purchase behavior is only concerned with choices made from an evoked set of acceptable brands. Other preference criteria would be relevant in the creation of this acceptable set but are not considered in this theory.

Alternatively, the effect may be derived from choice simplification resulting from information overloads (see Malhotra 1984a for a review). In the case where the consumer is exposed to clutter-- multiple coupons, multiple store ads, and multiple in-store inducements--confusion may result in the use of a simple heuristic as a way to avoid further information processing demands. For example, the consumer may believe that using a coupon will lead to obtaining the lowest possible price. Using this rule avoids the necessity of processing additional price-related information.

Both of these explanations would result in coupon primacy--a form of serial position effect (Feigenbaum and Simon 1962). The primacy construct has been primarily researched in the communications context as order effects in verbal learning where a U-shaped curve of both primacy and frequency effects has been repeatedly confirmed (Ray, 1973). The Ray and Webb clutter studies (1978) in particular find first commercials of commercial strings most effective even in conditions of increasing clutter. Primacy, rather than recency, is a particularly attractive hypothesis as it is bolstered by the construct of cognitive dissonance. Consumers may not wish to jeopardize previous decisions by being shown a failure to achieve objectives such as "pay the lowest price." New information may have the potential to show that the investment in coupon clipping has been wasted.

This model of consumer coupon behavior should be mediated by individual differences. Information

overload research has advanced a number of relevant differences (see Malhotra 1984a for a review).

Particularly relevant for promotion behavior should be the consumer's degree of experience in using coupons. Consumers relatively inexperienced in using coupons should be particularly vulnerable to a coupon primacy effect. Once consumers have become accustomed to using coupons, they may develop more complex decision rules--incorporating other purchase influences in a joint strategy or "best" rule--for example the decision rule "buy the cheapest."

Model 2: Lowest Price

According to a lowest price model, consumers may be more likely to consider all available options and not remain committed to using a particular coupon. These consumers would be expected to be less motivated by feelings of wasted effort, as they would be more skilled at selection of only the best offers--high value coupons, store advertising with "hottest" specials, etc. Consumers without these skills may respond to such offers when not in possession of a particular coupon. Once precommitted, other factors should have no impact on choice. Responding to several promotions could be part of an overall purchasing strategy to find the lowest price. Information processing studies of consumer choice heuristics (Bettman and Zins, 1977) show that some consumers are attempting this strategy. That consumers can actually determine the cheapest is not always clear. Capon and Kuhn (1982) show that only a minority of consumers are able to calculate best buys, although the Russo (1977) unit price experiment does show immediate consumer learning.

The distinction between the coupon primacy and lowest price models is analogous to the distinction made by Bettman (1979) between decision making outside and inside the store. A decision made outside the store--to buy the brand for which a coupon is available--is indeed an easier decision than one made by comparing a number of alternatives inside the store. Contrary to the Bettman conception, however, this type of decision is seen here as most appealing to those consumers with the *least* experience at incorporating promotions into their decision making. The comparison of a number of brands on the basis of multiple promotional attributes -- the lowest price model -- should be appropriate for those more experienced with promotions.

Hypotheses

The two models of coupon behavior described above are directly contradictory. However, the behavior patterns may accurately describe two alternative types of consumers. As discussed above, the two alternative models are distinguished by the consumer's desire to simplify the process of using a coupon. This desire should be more pronounced in those who are less experienced at using promotions. Experience with promotions can best be approximated by a consumer's current degree of deal-proneness. Deal-proneness will therefore provide the qualification to each model.

- H₁: Coupon primacy--Price paid should be higher when a coupon is used than when it is not used for less deal-prone consumers.

Consumers who are relatively less experienced with using coupons should be particularly vulnerable to

simplification strategies and thus more likely to ignore shelf price or other in-store stimuli when planning to use a coupon. Note that such consumers will be generally less responsive to other promotional elements. The hypothesis test the *difference* in responsiveness between coupon and noncoupon purchases.

H₂: Lowest price--More deal-prone consumers should make choices based on the combination of coupon discount and shelf price.

Consumers who are relatively more experienced with using coupons should, of course, be generally more sensitive to all forms of promotion. The hypothesis suggests that such sensitivities are more than additive; they are expected to interact in a positive fashion.

Methodology

The two competing models are tested by comparing the effect of using a coupon on a purchase and not using a coupon. The data are records of individual purchases collected from a "northeast scanner market"--a metropolitan area of about 250,000 population. This market contains three major grocery chains, with a total of 15 stores, all of which are part of the scanner system. This coverage amounts to 85% of the All Commodity Volume. The period covered by the data is from April to October 1981 for overlapping data series. Purchases of two product categories are analyzed: bathroom tissue ("paper") and caffeinated instant coffee ("coffee"). The categories were selected on the basis of data availability. Category boundaries are defined using preexisting partitioning data (Urban, Johnson and Hauser 1982; Vanhonacker 1979).

A data base was constructed with all category purchases and included brand choice, whether a coupon was used on the purchase, and characteristics (price, advertising, and deal packs) of all available brands. The characteristics represent the price and promotional environment available to the consumer. Other purchase influences such as qualities of the brands themselves or media advertising are not used in modeling. The available variables include the following:

Price/Unit: The price per unit variable was calculated from shelf price information provided by store-level data files. For paper the relevant price is price per roll; for coffee it is price per ounce.

Retail Ad: Retail ad means that the product was advertised in local newspapers by the grocery store during the week of purchase. Such advertising stressed price, but the product was not necessarily discounted by the retailer. Advertised specials were defined as pertaining to all variations of a brand size.

Manufacturer Ad: This measure indicates that the brand was advertised in local newspapers by the manufacturer during the week of purchase. All such ads carried coupons.

Coupon: Coupon denotes that the purchase was made using a coupon from any source. The coupon did not need to be the one carried in a manufacturer's ad.

Price Change: Price change was defined as the difference, measured in dollars, between the current price and the average shelf price at the same store, using store scanner data, during the week preceding the purchase. (A value of -.05 indicated that the brand had been discounted five cents.) This data base was divided into relatively homogeneous deal-proneness segments, defined on the basis of previous work (see Henderson 1986 for details of the segmentation procedure). These segments, shown in Table 1, were unique to each product category.

The groups were isolated with the aid of cluster analysis on five variables: percentage of purchases made with coupons, price changes, deal packs, retail newspaper ads, and manufacturer newspaper ads. The coupon-using clusters are defined on the basis of very high (heavy coupon users) or moderately high (light coupon users) coupon usage. The multi-deal-prone group was a small segment with abnormally high responsiveness to all five forms of promotions. The cluster analysis did not yield a multi-deal-prone cluster for the paper category.

Analysis

Preliminary analysis involved a cross-tabulation comparison of characteristics of coupon vs. noncoupon purchases. A multinomial logit brand choice model was then used to compare purchase influences between purchases on which a coupon was used and those on which one was not used. The cross-tabulation compares purchase attributes which pertain to the selected brand, for example, the average price paid when a coupon is used and not used. The logit model compares the relative effect of a variable, for example, the shelf prices of all available brands, on choice for coupon and noncoupon purchases (see Malhotra 1984b for a review of application of this model). This model has been widely used in promotion studies (Hee 1981; Guadagni 1980; Novich 1981; Levin 1980; Jones and Zufryden 1980) and is based on a choice theory (Luce 1959).

The model expresses choice as a function of marketing variables for each brand:

$$\text{Probability } j(i) = \frac{\exp \sum_i B_i X_{ijk}}{\sum_h \exp \sum_i B_i X_{ijk}} \quad (1)$$

Where:

I = brand chosen (where a choice is defined as a brand/size combination)

j = purchase occasion

i = attribute (promotion variables)

k = alternatives (available brands)

X_{ijl} = i th attribute of alternative I chosen on occasion j

B_i = coefficient of attribute i

X_{ijk} = i th attribute of the k th alternative on the j th occasion

The model's consumer homogeneity assumption is mitigated in this research by running the choice model for individual deal-proneness segments. Within each segment, consumers are assumed to be homogeneous. Where sample sizes permitted, the files were further

Table 1

	Number of purchasers	Percent of Purchases Using a Coupon
Paper		
Light coupon users	104	10%
Heavy coupon users	208	57
Coffee		
Light coupons users	515	6
Heavy coupon users	408	65
Multi-deal-prone	50	36

divided into two samples to test the model's stability. Note that in a few instances, this research was forced to use samples that fall slightly below the minimum size (N=50) generally considered acceptable for maximum likelihood estimation (Malhotra 1984b). The IIA (Independence of Irrelevant Alternatives) assumption is dealt with by calculating an "evoked set." The components of the available choice set were allowed to vary for each consumer and for each purchase. A brand was considered unavailable if the consumer had never bought the brand or if the brand was out of stock. In this way completely brand-loyal consumers were automatically eliminated from the analysis. The independent variables were the marketing variables for each brand on each observation: *price change*, *price/unit*, *deal pack dummy*, *retailer ad dummy*, and *manufacturer ad dummy*. There were some small correlations between these variables--with only coffee retail ads and price changes potentially problematic at .53.

The overall significance of the model was tested with a likelihood ratio statistic and with U-squared (Hauser 1978), a measure of the amount of uncertainty in the data explained by the model. T-tests were used to test the significance of the coefficients and the relative contribution between the coefficients of the coupon and noncoupon models. All tests were at the 90% level of significance.

The brand choice model used in hypothesis 1 was expanded to include the additional variable *net price*--defined as shelf price per unit minus the average coupon value of all coupons redeemed on the brand during the week (corrected to a per unit basis). Net price represents the average price available to a consumer taking advantage of current coupons. Hypothesis 2 was tested by the coefficient of this variable--expected to be

significant for the most deal sensitive consumers. For this analysis, the model was run on files combining both coupon and noncoupon purchases, the price variable was dropped from the model, and a new variable--*coupon share*--was added. Coupon share accounts for the relative availability of a brand's coupons during the week of purchase and is defined as share of redemptions. Where possible, these files were subdivided by store of purchase.

Results

The results of the comparison between coupon and non-coupon purchases are shown in Tables 2 and 3. Table 2 shows that price and price change remain virtually unchanged for both paper consumer segments irrespective of coupon use. These results fail to replicate the Levedahl findings. Both segments do show that consumers are more likely to be buying an advertised brand when they are using a coupon--although the result is not statistically significant--and are less likely to be buying a deal pack.

The results for coffee, shown in Table 3, are in the direction predicted by the coupon primacy hypothesis. Consistently--across all three consumer groups shown--the price paid per ounce is higher when a coupon is used than when one is not used. While this finding is not statistically significant it is supported by two additional results. Consumers are more apt to respond to a price change or a retail feature when they are not using a coupon than when they are.

The results of the multinomial logit analysis are shown in Tables 4 and 5 for the coupon primacy hypothesis. There is only limited evidence to support the existence of a coupon primacy effect in brand choice. Table 4, for the paper category, shows that light coupon users have a similar pattern of purchase influences irrespective of coupon use. Heavy coupon users, those not expected to exhibit coupon primacy, do show minor differences between the two types of purchases. However, these differences are not evidence for the effect: manufacturer ads (which carry coupons) are associated with coupon purchases and shelf price/unit is statistically significant for these purchases. For the coffee category, both the heavy coupon users and the multi-deal-prone segment have a similar set of coefficients for coupon and noncoupon purchases. However, there is one example of promotion variables becoming less important when coupons are used. Light coffee coupon users appear likely to buy the retail advertised brand when not

Table 2
A Comparison of Coupon and Noncoupon Purchases: Paper

	Light Coupon Users		Heavy Coupon Users	
	coupon	no coupon	coupon	no coupon
Number of Purchases	(61)	(703)	(618)	(771)
Price/Roll	\$.28 (.084)*	\$.28 (.048)	\$.255 (.052)	\$.257 (.048)
Price Change	\$.00 (.016)	\$.00 (.039)	\$.00 (.029)	\$.00 (.016)
Retail Ad	39.3% (49.3)	23.0% (42.1)	2.1% (14.3)	.6% (8.0%)
Manufacture Ad	26.2% (44.4)	4.7% (21.2)	10.4% (30.5)	5.2% (22.2)
Deal Pack	.00% (.00)	4.7% (21.2)	0.0% (.00)	2.1% (14.4)

* Standard deviation is shown in parentheses.

Table 3
A Comparison of Coupon and Noncoupon Purchases: Coffee

	Light Coupon Users		Heavy Coupon Users		Multi-Deal-Prone	
	coupon	no coupon	coupon	no coupon	coupon	no coupon
Number of Purchases	(209)	(1715)	(1076)	(781)	(43)	(73)
Price/oz.	\$.491	\$.485	\$.478	\$.475	\$.388	\$.352
	(.143)*	(.141)	(.134)	(.132)	(.094)	(.053)
Price Change	\$.00	\$-.00	\$-.01	\$-.03	\$-.208	\$-.240
	(.066)	(.084)	(.075)	(11.5)	(.190)	(.23)
Retail Ad	2.4%	3.9%	4.9%	10.6%	65.1%	65.8%
	(15.3)	(16.8)	(21.7)	(30.8)	(48.2)	(47.8)
Manufacturer Ad	10.0%	3.2%	6.3%	3.7%	27.9%	8.2%
	(30.1)	(17.6)	(24.3)	(18.9)	(45.3)	(27.7)
Deal Pack	22.5%	16.2%	23.0%	24.8%	46.5%	38.4%
	(41.9)	(36.9)	(42.1)	(43.2)	(50.5)	(48.9)

* Standard deviation is shown in parentheses.

redeeming a coupon. When using a coupon, this association is not seen--there is a significant negative coefficient for retail advertising on coupon purchases. For these consumers, therefore, the use of the coupon would appear to inhibit the "normal" effects of other purchase influences.

While the likelihood statistics are significant (using a Chi-square test) for these models, the U-squared shows that in most cases the models have modest explanatory power. These results are consistent with previous work in this area for the impact of promotion variables alone (Guadagni 1980; Hee 1981). The results are quite stable, however, as seen in the two samples generated for heavy coffee users. Eight out of the ten coefficients are well within one standard error between the two samples.

Table 6 shows strong evidence in favor of the lowest price hypothesis for the coffee category. Net price is significant for both the multi-deal segment and for store 1 (a warehouse type of grocery store) purchases for the heavy coupon-using segment. Heavy coupon users who do not shop in store 1, appear to make choices based on price changes alone. For these consumers net price--the price which incorporates coupon values--is not a significant predictor of choice. The multi-deal segment and store 1 shoppers are responding to a price variable which includes coupon values.

Implications

Despite the widespread belief in the interactive effects of coupons with other elements of the marketing mix, this research finds only limited evidence for these effects. For the most part, the results favor the null hypothesis: that coupons do not have large interactive effects with the other factors tested. Coupon and noncoupon purchases look surprisingly similar, both with respect to characteristics of the purchased brand and influences affecting brand choice. These results are analogous to previous work (Henderson 1984) profiling redemption occasions. Factors such as day of week were found to have no effect in distinguishing redemption occasions. The picture that emerges, therefore, is that coupons are largely incorporated in purchasing patterns without negating the usual influences on choice.

There is, however, some minor evidence supporting the coupon primacy hypothesis. All coffee consumers--not just those who are light coupon users--appear to be slightly less price sensitive or feature sensitive when using coupons. From this research alone,

however, this result is not really managerially relevant. Future research should test this finding in other product categories and with variables unmeasured in this study, particularly with display. If further evidence can be found for this effect, the heavy use of overlays and simultaneous events can be questioned.

Table 4
Brand Choice Coefficients¹ Coupon vs. Noncoupon Purchases: Paper

	Light Coupon Users	Heavy Coupon Users
<i>Coupon Purchases</i>		
N	(47)	(297)
Price/Unit	2.09	-.00*
	(.73) 2	(2.18)
Price Change	29.99*	-6.35*
	(1.49)	(-9.26)
Manufacturer Ad	2.71*	.88*
	(4.29)	(3.38)
Retail Ad	2.71*	.25
	(3.14)	(.49)
Likelihood	45.44*	139.70*
U ²	.27	.13
<i>Noncoupon Purchases</i>		
N	(208)	(230)
Price/Unit	-.00	.00
	(.32)	(1.26)
Price Change	9.56*	-3.97*
	(9.20)	(-6.16)
Manufacturer Ad	1.25*	-.26
	(3.02)	(-.54)
Retail Ad	1.09*	-.61
	(3.12)	(-.81)
Likelihood	184.74*	46.43
U ²	.25	.06

¹ The evoked set requirement (elimination of brands never purchased) could not be used in the analysis of the paper category.

² Values shown in parentheses are t-statistics.

* Significant at .90

Table 5
Brand Choice Coefficients Coupon vs. Noncoupon Purchases Coffee

	Light Coupon Users	Heavy Coupon Users ¹		Multi-Deal-Prone
		Sample 1	Sample 2	
<i>Coupon Purchases</i>				
N	(196)	(339)	(272)	(41)
Price/Unit	-3.06*	-3.41*	-3.75*	-12.93*
	(-5.06)	(-7.17)	(-6.90)	(-2.70)
Price Change	1.21	-11.98*	-6.49*	-34.16*
	(.22)	(-3.18)	(-1.45)	(-2.38)
Manufacture Ad	1.93*	.40	.27	9.77
	(2.95)	(1.07)	(.66)	(.71)
Retail Ad	-2.15*	-.09	.23	.39
	(-2.05)	(-.17)	(.41)	(.43)
Deal Pack	-2.29*	-1.15*	-1.12*	1.09
	(-4.49)	(-5.20)	(-4.47)	(1.09)
Likelihood	83.25*	110.55*	85.63*	80.55*
U ²	.13	.10	.10	.66
<i>Noncoupon Purchases</i>				
N	(275)	(278)	(277)	(54)
Price/Unit	-3.07*	-3.57*	-3.80*	-18.73*
	(-6.07)	(-6.49)	(-6.98)	(-2.84)
Price Change	5.05	-11.42*	-6.10*	-24.67*
	(1.23)	(-3.24)	(-1.81)	(-1.43)
Manufacture Ad	-.27	.61	.27	-.44
	(-.40)	(1.06)	(.52)	(-.00)
Retail Ad	1.32*	.04	.24	7.92
	(2.28)	(.09)	(.53)	(.40)
Deal Pack	-1.77*	-.55*	-.73*	-7.14
	(-5.12)	(-2.47)	(-3.20)	(-5.0)
Likelihood	87.72*	85.19*	82.47*	128.28*
U ²	.11	.10	.09	.84

¹ Heavy coupon users were divided into two samples to test the reliability of the model.

* Significant at .90

Table 6
Coefficients for Lowest Price Effect: Coffee

	Multi-Deal-Prone	Heavy Coupon Users			
	All Stores	Store 1	Store 2	Store 3	
N	(97)	(79)	(295)	(245)	(287)
Price Change	-41.95*	-3.12	-13.26*	-7.69*	-24.33*
	(-5.48)	(-.67)	(-2.36)	(-1.55)	(-7.28)
Manufacturer Ad	6.02	1.25	.08	.16	.51
	(.44)	(.89)	(.17)	(.33)	(.92)
Retail Ad	1.34*	-.88	-.11	-.19	.32
	(1.59)	(-.58)	(-.18)	(-.37)	(.58)
Coupon Share	1.35	2.25	-.32	.26	.32
	(.53)	(1.03)	(.36)	(.26)	(.58)
Net Price	-1.27*	-2.01*	-.32	.19	.17
	(-1.32)	(-3.60)	(-.36)	(.39)	(.37)
Likelihood	160.32*	18.37*	8.74	2.95	97.52*
U ²	.73	.12	.01	.00	.10

* Significant at .90

This study shows an interesting pattern to the coupon primacy findings: the hypothesis is more clearly supported in the coffee category than in the paper category. As a potentially more salient purchase because of its higher shelf price, these results are not surprising. Certain coffee buyers may be so eager to take advantage of the coupon that their selection is largely guided by

the coupon's availability. Makers of high-priced products might be particularly sensitive to this consumer tendency. High-valued coupons may be a sufficient inducement in themselves and may not require any supporting programs.

On the other hand, other coffee consumers seem well able to integrate coupon usage with price

considerations. The defining characteristics of such consumers are deal usage and store of purchase. This situation lends some modest support to the effectiveness of trying to achieve a lowest price position among a set of competing brands through the use of coupons. Manufacturers should note, however, that only a subset of consumers appear to be following a lowest price shopping strategy. This would argue for the selective use of high valued coupons-- appropriately targeted to those segments who use such coupons in making choices. High valued coupons to other groups may be an inefficient use of promotional budgets. In designing effective promotional programs, manufacturers should recognize the importance of interactions between the program's elements. This study advocates the importance of conceptualizing and testing the behavioral mechanisms which can explain interactions on an individual level. Further research is needed to specifically test the relevant behavioral mechanisms. For example, although this study asserts that commitment to a coupon may prevent response to other promotions or prices, the exact casual ordering could be investigated in a laboratory setting. In addition, more complex choice models including variables beyond prices and promotions would enrich our understanding. Finally, research is needed to separate the exact psychological mechanism involved--for example, precommitment or choice simplification involved in coupon primacy. Only further exploration of these effects--particularly for individual product categories--can help sharpen our understanding of consumer response in a cluttered environment.

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**Communicating Effectively to Consumers Through Salespeople:
A Look at Competent Salespeople
An Overview of this Special Session
Harish Sujana, The Pennsylvania State University**

Two important sources of influence for decisions that consumers make are advertisements and salespeople. Across the wide range of purchasing decisions that are made, the influence of salespeople is often more than that of advertising. Yet, this source of influence, in contrast with advertising's influence, is very much the under-researched domain.

Several approaches can be taken to study salesperson influences on consumer decision making. The traditional approach has been to study the interaction between buyers and sellers. A second approach is to study consumers' reactions to various salesperson cues. This approach closely parallels the study of consumer reactions to advertising cues. To illustrate, Sujana, Bettman and Sujana (1986) looked at the impact of salesperson arguments on consumer preferences, when the salesperson's appearance and introductory remarks were consistent or discrepant with consumers' expectations. This work resembles work done on the impact of arguments presented in advertising contexts, when the message is consistent or discrepant from consumers' expectations (e.g., Sujana 1985). Another example is research on "schemer-schema", recommended by Peter Wright in his ACR presidential address (1985). This research when done with salespeople, rather than with ads, may take the form of examining how consumers interpret salespeople's actions, and the explanations they give for why salespeople do what they do.

Also relevant to the understanding of salesperson influence in consumer decision making, is studying the salesperson's behaviors and cognitions from his or her own perspective. For example, one might ask what information -- pertinent to influencing consumer choice -- do salespeople have, and how does this differ between better and worse performers? Or one might ask how do salespeople explain a successful persuasive attempt and how do they explain an unsuccessful persuasive attempt, and what effect do these explanations or attributions have on their behavior with their customers? The contribution of research focusing on the salesperson alone, as against the salesperson and his or her customer, is likely to be similar to research focusing on advertising alone, for example, work done on the linguistic structure of ads (e.g., Thorson and Snyder 1984). An integration of research focusing on the salesperson alone, research on buyer-seller interactions and research on consumers' reactions to salespeople, could result in a rich theory of salesperson influences in consumer decision making.

Besides broadening the scope of research on consumer decision making, another motivation for consumer behavior theorists to conduct salesperson research is that a synergy exists between many current areas of investigation in consumer research and many, potentially interesting, areas of investigation in salesperson research. Several psychological constructs that have been applied in consumer behavior research are equally relevant for the study of salespeople. For example, research on categorization, that has been applied to the study of consumer knowledge and expertise

(e.g., Alba and Hutchinson 1987), is very helpful in studying the knowledge structures salespeople have for their customers and for strategies for selling to these customers (see, for example, Sujana, Sujana and Bettman 1988). In fact, since person perception rather than object perception has been the foundation of several psychological theories, such as attribution theory (see, for example, Fiske and Taylor, 1984), studying salespeople's perceptions of consumers or consumers' perceptions of salespeople may lead to greater theoretical insights than studying consumers' perceptions of objects such as products. Finally, for consumer behavior researchers interested in "efficiency" or "accuracy" questions (Bettman 1987), the study of salespeople may be specially appealing, since in the selling domain it is easier to distinguish good "decision-makers" from poor ones, based on criteria such as the supervisor's performance evaluation. This synergy between traditional consumer behavior research issues and salesperson related research issues suggests that it would be fairly easy to extend the domain of consumer behavior research to incorporate salesperson issues.

Lastly, research on salesperson issues can also contribute to growth in the understanding of some traditional consumer behavior issues. An area that seems particularly likely to benefit from this work is family decision making. For some kinds of family decisions, the process by which family members iterate from differing preferences to a common choice may closely resemble a sales process. For example, a family decision in which one family member takes an advocacy position on an issue. Thus, identifying commonalities between these two domains may prove to be of substantial benefit to both sets of research interests. A second area of overlap between traditional consumer behavior issues and salesperson issues is in the domain of source or spokesperson effects. There may be some common processes of influence by which salespeople and spokespersons in advertisements influence consumers.

In this special session -- an introductory attempt to interest consumer behavior researchers in salesperson issues -- the focus was on salesperson competence. It would have been beneficial, in terms of achieving the goal of demonstrating to consumer behavior researchers the close fit between "salesperson" issues and "consumer behavior" issues to have all presentations focus on the customer rather than on the salesperson. However, this could only be achieved in part. The presentation by Klemp made the role of the customer clear and thus was very functional towards this goal. The presentations by Leong and Roedder-John and by Szymanski and Churchill focused on the salesperson, though the place of the customer in the questions they asked was fairly explicit. In the last presentation, by Sujana, the focus was more heavily on the salesperson, and the connections with consumer decision making were more distant. All four research studies used theories and methods that should be of interest to consumer behavior researchers, and somewhat novel ideas on knowledge, motivation, impression formation and competency, in general, were presented.

In what follows a short description of each of the studies is given together with an attempt to place them in the broader context of salesperson behavior research, as traced above.

Presentation 1

"What to Look for in a Sales Professional: A Consumer's Guide"

George O. Klemp, Jr, Charles River Consulting, Boston.

George Klemp is a psychologist (from Yale) who worked for many years with David McClelland at assessing the characteristics of competent performers in various professions. This work was done at a consultancy organization, McBer and Company, and resulted in the development of interesting methods for assessing competence as well as some intriguing insights on what constitutes competence in several professions, including sales. George now is a partner in the firm he works for and is carrying through with his interest in competency research.

In his presentation, George focused on the characteristics of the excellent salesperson, viewed from the customer's perspective. He feels that consumers need to, and in fact are able to, recognize when a salesperson is acting in such a way as to ensure customer satisfaction. Based on empirical work done by him, he described means by which consumers can assess if salespeople are acting in the consumer's interests, are less than helpful, or are acting only in regard to their own gain. His work fits with the notions of being customer-oriented while selling (Saxe and Weitz 1982), selling consultatively and developing long-term buyer-seller relationships.

The methodology he follows is to, first, identify groups of salespeople who vary on some performance criterion -- in this case salespeople whose customers are generally satisfied with them and salespeople whose customers are generally not satisfied with them. Then, following a technique that originated with Flanagan's (1954) critical incident technique and was later refined at McBer (McClelland 1976), he records in great detail what these two classes of salespeople do with their customers. By comparing the differences between these two known groups, he arrives at conclusions for what customers value in salespeople.

George Klemp's work fits with the general theme of customer perception's of salespeople. It provides one of the first examples of research in the area of "schema" (Wright 1985) by examining consumers' perceptions of what tactics make salespeople effective. Further, Klemp's methodology is an interesting one and different to the ones commonly used in academic research.

Presentation 2

"Selling Scripts: A Way to Look at Customer and Salesperson Expectations"

Siew Ming Leong, National University of Singapore, and
Deborah Roedder-John, University of Minnesota.

This presentation was based on the notion of scripts (Schank and Abelson 1977) and, more generally, expectations. Salespeople subjects were classified as high or low performers, and their scripts for what happens during interactions with their customers were elicited. Differences in the scripts of high and low performers were identified, in terms of elaborateness and some qualitative knowledge measures. Additionally, differences in scripts for typical and atypical selling

situations were examined. A natural extension of this work, and this was mentioned in the presentation, is to look at *consumers'* expectations of what happens in a buyer-seller interaction, comparing the expectations of expert and novice consumers, for typical and atypical selling situations.

Presentation 3

"Differences in Selling Effectiveness: A Categorization Process Perspective"

David M. Szymanski, University of Wisconsin-Madison.
Gilbert A. Churchill, Jr., University of Wisconsin-Madison.

This study, undertaken from a categorization perspective, looked at how salespeople categorize their customers. It was proposed that an important difference between effective and ineffective performers is the accuracy with which they classify their customers.

A computer exercise was developed in which salespeople classified hypothetical, prospective clients. The computer exercise allowed an examination of the cognitive process used for categorizing customers. Specifically, it enabled an examination of (1) the particular attributes used to classify clients, (2) the number of attributes referred to before identifying a client as a member or a non-member of a category, (3) the time taken to examine individual attributes and, more generally, (4) the nature of the categories used for classifying different kinds of prospective customers. Differences in these aspects of process between effective and ineffective performers was then inferred.

This study adds to research in consumer behavior for many reasons. For one, the process by which categorization occurs has been of interest to consumer behavior researchers (e.g., Alba and Hutchinson 1987) and this work adds to this literature. A second reason is that the computer exercise may be a useful methodology for future work examining the process of categorization. Further, at a more substantive level, this study may prompt an examination of how *consumers* categorize different classes of salespeople.

Presentation 4

"Salespeople's Knowledge of Customers and Selling Strategies"

Harish Sujana, The Pennsylvania State University

This research follows-up on the work done by Sujana, Sujana and Bettman (1988). They looked at, from a categorization perspective, differences between more and less effective sales performers, in terms of their knowledge of customer characteristics and sales strategies. Illustratively, they found that more effective performers had greater overlap, across customer categories, in their knowledge of customer characteristics and sales strategies.

Three objectives were described for the current study. First, to trace the stages salespeople go through while developing their categorical knowledge. Changes in categorical knowledge as salespeople move from being new and ineffective sales performers to being experienced and effective sales performers would be charted. For example, salespeople may start with highly distinct customer categories, move to overlapping categories and then, in advanced stages of knowledge development, to more distinct categories.

Second, attributions made by salespeople for their successes and failures would be examined for their effect on knowledge development. Particular causes, such as

attributions to good and poor strategy, were proposed as being particularly facilitative for knowledge development. Since attributions are a motivational factor, this analysis would link motivation and knowledge. Understanding this process, it was suggested, could also provide insights into the question of how consumers develop expertise.

Third, differences between more and less effective sales performers in the attributions they make for their successes and failures would be examined. These differences would give an indication of differences in motivational orientations between better and worse performers. An illustrative finding presented was that better performers more than worse performers tend to attribute their failures to poor strategies and bad mood, while worse performers more than better performers tend to attribute their failures to difficult task and bad luck.

In Conclusion, this special session was an initial attempt to integrate behavioral salesperson research with consumer research. The basis of this integration, it was suggested, is that the effectiveness of salesperson communication depends critically on the consumer's reaction to influence attempts. A second basis suggested is that parallel theories and methods are applicable for consumer and salesperson behavior research.

Addendum

As discussant, William D. Perrault, Jr of the University of North Carolina, characterized the selling process as one of sizing up (the customer) and responding (with sales strategies). He said that this was an adaptive process and the notions of accuracy and efficiency expressed by James R. Bettman in his presidential address were very relevant here. Further, since the selling process is an iterative one, requiring constant updating, dynamic theories and methods are needed to understand this process. Currently, many *static* theories and methods are available to the researcher and it is a challenge to develop suitable dynamic theories and methods. Some ten years ago research on methods such as the Bales (1950) interaction process analysis appears to have lost favor -- this and other dynamic methods could be developed further.

Lastly, he pointed out that recent developments in methods for studying cognitive processes, such as protocol analysis (see, for example, Bettman 1979), and analyzing dynamic data, e.g., short time-series analysis, could be used to explicate the sales process.

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Problems With VALS in International Marketing Research: An Example From An Application Of The Empirical Mirror Technique

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Abstract

This paper examines the usefulness of VALS by surveying a cross-section of students from both the U.S. and other countries and by presenting, explaining, and applying a VALS algorithm, which was empirically developed to mirror the proprietary VALS algorithm. The results suggest that the demographically adjusted empirical mirror approach to VALS does a reasonable job of reproducing VALS categorizations. The problems of studying values cross-culturally and the use of VALS specifically are addressed. An alternative methodology, LOV, is suggested as a preferable means to examine value structures.

Introduction

Values are central to people's lives (Rokeach 1973). Many behaviors are enacted to fulfill values. Values influence attitude formation and the way in which information is processed, for example. Recent marketing research has shown that values have a significant influence on, among other things, television viewing habits, activity preferences, store choice, consumer decision criteria, consumer product choice, reaction to discontinuous innovations, and cigarette smoking (Becker and Conner 1981, Kahle 1985, McQuarrie and Langmeyer 1985, Pitts and Woodside 1984).

Values provide clues about how a society operates because values are also central to society. Some scholars view values as the individual's representation of a society's goals. If one wants to understand a culture, investigation of the values of people in that culture provides a promising starting point. Values should logically be a central topic for cross-cultural research. A recent study (Kahle 1986) demonstrated that values vary among geographic regions in the U.S. Nevertheless, few scholars have published rigorous studies designed to investigate comparative values internationally (Berrien 1966; Zavaloni 1980).

International Research on Values

The opportunities and needs for international research on values have been expanding recently. Cultural exchanges flourish as international relations dictate people's economic and social well-being. Due in part to the importance of the emerging global economy, many countries are rapidly increasing their importance in the international marketplace, and residents of each of these countries may have a slightly different pattern of values, which international marketers will need to fathom.

Cross-national study of values can provide needed cross-cultural understanding of consumers. Japanese marketers, for example, have long promoted their products in the U.S., yet they still have much to learn about the American consumer. One reason Toyota agreed to a joint venture with General Motors was that it provided "a relatively cheap and quick way to learn how to operate in the U.S. with a partner who knows the ins and outs of American business" (*Business Week*, May 28,

1984, p. 58). American businesses are also eager for information about foreign consumers. In the 1986 *NCEIS Trade Analyst* readership poll of the top ten trade issues, international marketing was listed as the number one priority. An understanding of cross-cultural values can assist U.S. firms in marketing their products successfully to foreign consumers. The positive impact on profits of individual firms could be accompanied by an improvement in the U.S. foreign trade balance of payments.

Researchers can examine the relation of values to consumption of specific products within different countries. For example, researchers can explore the effect of values on segmentation and targeting of products. Because values influence the way in which consumers react to product offerings, advertising, packaging, pricing, personal selling, and retailing, the effective marketer should be aware of this influence and incorporate it when developing marketing strategy and when planning products. Some failures by firms attempting to penetrate foreign consumer markets may be traceable in part to misunderstanding of values and how those values influence consumer choice.

VALS Research

Marketing scholars (e.g., Holman 1984) have informally expressed a great deal of interest in the Values and Lifestyles (VALS) methodology developed at SRI International by Mitchell (1983) and others. The creators of this approach emphasize its combined segmentation power based on demographics, life style variables, and values. Its conceptualization implies that it has potential for international value research. Researchers have been limited, however, by lack of access to the VALS weighting algorithm, which is proprietary. One purpose of this article is to propose and examine a public algorithm for weighting responses to critical questions that will approximate the VALS weighting system, enabling researchers of international values to use it. This proposed system is based on mirroring empirical data reported by Mitchell (1983).

The development of VALS started from the theoretical base of Maslow's (1954) need hierarchy and the concept of social character (Relsman, Glazer, and Denny 1950). Mitchell (1983) conducted the primary study of VALS. Through statistical and theoretical means he identified attitude and demographic questions deemed useful in classifying people into one of nine life style types. The life style types in the United States include survivors (4%), sustainers (7%), belongers (35%), emulators (9%), achievers (22%), I-am-me (5%), experiential (7%), societally conscious (9%), and integrated (2%).

Weighting of questions for classification was developed using data from a national probability sample of 1635 Americans and their spouses/mates (1078) who responded to an SRI International mail survey in 1980. Although many studies have apparently applied the VALS methodology (Holman 1984), only the 1980 study results have been made public for quantitative inspection,

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and even then the weighting system was not reported; however, Mitchell did report what questions are used in the VALS algorithm and presented data on the percentage of people who agreed with each item in each VALS type (with the exception of the integrated group). The lack of public access to the scoring algorithm has also led to a lack of information on the validity of the VALS approach on U.S. data.

We know even less about the degree to which this approach would yield meaningful results in other countries. Mitchell (1983) devotes one chapter to this issue, in which he presents the findings from one VALS study that examines 5 countries. He compares European life styles to American life styles, although he suggests that the research reported is preliminary. Beatty, Kahle, Homer and Giltvedt (1986) utilized the VALS algorithm on a Norwegian sample and found a number of similarities between VALS types in Norway and the United States.

The debate over measuring cross-national consumer values could progress to a higher level if scholars had easy access to a measurement system that approximates VALS. We are proposing that such an algorithm for scoring VALS can be derived. Therefore, the guiding hypothesis for the present study is that it is possible to develop a weighting system that approximates the VALS weighting system.

Method

Subjects

The subjects were 167 students enrolled at a large state university in the Western United States. In order to optimize heterogeneity of variance within such a homogeneous group and because of the importance of international values, we drew the primary sample from foreign students who had at least 25 other citizens of their country also enrolled at the University. This limit was applied to ensure that the student at least had an opportunity for ongoing interaction with fellow representatives of his or her culture. One university admission requirement is a score of at least 500 on the Test of English as a Foreign Language (TOEFL), implying respondents have developed at least a minimal facility with English. We also drew a sample of North Americans (70 U. S. citizens and 1 Canadian), again oversampling out-of-state students. Within these stratification parameters the sampling technique was a simple probability selection. All respondents had lived in the United States for at least 6 months and were thus probably at least minimally familiar with American issues assessed in the survey. Students who failed to reply to the initial mailing received a reminder telephone call the following week and a replacement questionnaire the week after that, resulting in a response rate of 52%.

Materials

Subjects responded to the VALS algorithm items reported by Mitchell. We excluded the questions on political party identification because a large percentage of respondents were not citizens of the United States. We excluded the question on occupation because all respondents were full-time students. We included a direct question on size of home town residence area. Mitchell coded size of residence area from zip codes, but many of our respondents came from countries without zip codes. Finally, we modified the question on *household* income to *personal* income because pilot testing revealed that

students found the wording of Mitchell's item confusing. That is, they were uncertain whether their household referred to their school or home town household. In several instances where we replicated Mitchell exactly we nevertheless failed to obtain responses in all response categories. For example, in our young sample no one answered the marital status question with *widowed*.

Categorizing Respondents into VALS Types

Because Mitchell does not supply the weights for computing VALS categories and because it is difficult to gain access to these weights (personal correspondence with B. Warrick, April, 1984), we developed an "empirical mirror" strategy to estimate weights. Mitchell (1983) does provide percentages of his respondents who fell into each VALS group for all but one of the VALS algorithm items. These data served as input for our estimation approach.

To compute the scores for VALS types we first standardized all algorithm items in our data (i.e., the first 25 items in Table 1) except the nominal, bracketed variables of marital status, political outlook, social class, and ethnicity. In accord with the VALS procedure, we calculated 8 separate VALS equations corresponding to each of the VALS types. The national sample percentages reported by Mitchell (1983, p. 279 ff.) were used to compute weighted means and weighted standard deviations for each of the VALS algorithm items. Next, for each item, the difference between the mean for each VALS group and the weighted overall mean was divided by the standard deviation. These numbers served as our weights and are reflections of the degree to which each category varied from the norm on each question in the national sample. The standardized scores of our sample data were then multiplied by the corresponding ratio. For example, the standardized score for item 1 was multiplied by each of the eight group ratios of the form:

$$\frac{\text{group } i \text{ mean for item 1} - \text{overall mean for item 1}}{\text{overall standard deviation for item 1}} \quad (1)$$

where group i (1,2,...,8) is each VALS type. This process was repeated for each VALS item except the nominal, bracketed items. At this point, all items referring to a specific group were summed, and this summation was performed for all 8 groups. This can be represented more generally as:

$$\text{VALS}_k = \sum_{j=1}^{25} s_j \frac{(\bar{x}_{jk} - \bar{x}_j)}{SD_j} \quad (k=1, 2, \dots, 8) \quad (2)$$

where:

- VALS_k = score for empirical mirror VALS group k
- S_j = subject's standardized score for item j
- \bar{x}_{jk} = group k 's mean for item j
- \bar{x}_j = overall mean for item j
- SD_j = standard deviation for item j .

Next was the treatment of the four nominal, bracketed variables. Because the absolute value of nominal variables has no meaning other than classification into categories, an alternative measure is appropriate to insure that a score is not biased in the wrong direction. Consistent with the previous items,

we calculated ratios of the difference between national sample group means and overall means and the national sample standard deviations. This calculation was done for *each* category level for the four nominal items. For example, for social class, ratios were calculated for each life style and relevant sample category level (3 levels) combination (i.e., 8 x 3 = 24 total ratios). These nominal item scores were then added to the eight life style equations for the level of the nominal variable selected by the respondent, thus yielding eight distinct scores for each subject. Table 1 shows the rounded item weight or bracket weight used for each VALS group for each item or bracket. The eight distinct scores are merely the summation of these rows with each item weight first multiplied by the respective standardized score of the VALS algorithm items, except that the bracketed item weights are added unadjusted. For each subject the eight scores were assessed, and the largest score defined how the subject was classified on VALS. Because Mitchell provided no data for the integrated category, it was not possible to include that category. Also, the item of father's education (but not own education) was excluded because Mitchell provided no data on it. The actual weights in the VALS algorithm are computed at the item-response level.

Because of the common observation among practitioners that VALS relies heavily on demographics, we also computed a demographically adjusted empirical

mirror, in which age, income, education, and marital status weights were multiplied by 5.

Results

The percentage of the people in each VALS type from Mitchell's national sample and the percentage of people from our sample falling in each VALS category with the actual VALS algorithm, the empirical mirror VALS algorithm, and the demographically adjusted empirical mirror VALS algorithm are presented in Table 2. Only 2 categories differed from Mitchell's national sample by more than 10% for the actual VALS and demographically adjusted empirical mirror: belongs and achievers. The shortage of belongs and achievers probably results from the youth of this sample.

Both of the empirical mirror formulations show a significant relationship with actual VALS. For the unadjusted empirical mirror the relation with actual VALS shows a contingency coefficient of .682, $\phi = .932$, and a $\chi^2(49) = 145.2$, $p < .001$. For the demographically adjusted empirical mirror relation with actual VALS the contingency coefficient is .755, $\phi = 1.15$ and $\chi^2(49) = 220.87$, $p < .001$. These results imply a strong relation between the empirical mirror techniques and actual VALS. As expected, the demographically adjusted empirical mirror appears to provide a closer approximation to actual VALS than does the unadjusted empirical mirror.

Table 1
Weights Assigned to Items for VALS Classification

Item	Surv.	Sus.	Bel.	Emul.	Ach.	I-am-me	Exp.	Soc.
I'd say I'm rebelling against the way I was brought up.	2.76	1.60	.31	.43	-1.31	-.73	-.73	-.03
In general, it's more important to understand my inner self than to be famous, powerful or wealthy.	-1.98	-1.18	1.16	-.57	-.97	-.57	1.05	.24
My greatest achievements are ahead of me.	-1.06	.91	-1.25	1.56	-.40	2.50	2.03	1.00
I believe a woman can work outside the home even if she has small children and still be a good mother.	-.82	.31	-.59	2.53	-.82	-.14	1.75	1.37
It's very important to me to feel I am a part of a group.	1.22	.98	.75	-.07	-.77	1.1	-1.35	-2.05
Overall, I'd say I'm very happy.	-2.01	-1.84	.80	-1.48	.45	-.26	.80	-.78
I would rather spend a quiet evening at home than go out to a party.	1.19	-.87	.91	-.96	-.03	-2.74	-1.24	.25
A women's life is fulfilled only if she can provide a happy home for her family.	.12	-1.18	.86	-.25	.49	-2.66	-1.18	-1.18
Air pollution is a major worldwide danger.	1.50	1.66	1.24	1.16	.14	2.00	1.83	2.09
I often feel left out of things going on around me.	1.64	2.10	.04	1.19	-1.18	.58	-1.02	.57
It is wrong for an unmarried man or an unmarried women to have sexual relations.	.96	-.75	1.01	-1.24	.24	-1.08	-1.63	-1.35
Women should take care of running their homes and leave running the country up to men.	1.45	.62	.97	-.81	-.33	-.75	-1.64	-1.70
It would be best for the future of this country if the U.S. continues to take an active part in world affairs.	-.87	-1.01	-.17	-.73	1.34	-2.70	.39	.53

continued

Table 1 (cont.)

The purchase and use of marijuana should be legalized.	-0.88	1.01	-0.83	1.41	-0.60	1.12	1.93	.67
I think we are spending too much money on military armaments.	1.50	.20	-0.08	.29	-1.48	.48	2.13	1.04
During the past three years would you say your financial situation has: been getting worse, stayed the same, or been getting better?	-2.11	-1.55	-0.56	-0.41	1.35	.29	1.12	.51
How satisfied are you with your present financial situation?	-1.72	-2.31	.63	-1.40	.73	-0.76	.25	.14
How much satisfaction do you get from your job?	-1.99	-1.99	.60	-1.68	.72	-0.45	.11	.41
How much satisfaction do you get from nonwork activities such as hobbies?	-3.41	-.62	-0.03	-.54	.14	1.16	2.34	-0.11
How much satisfaction do you get from your friends?	-1.08	-1.08	.53	-1.62	-.18	1.51	2.04	-0.99
How much confidence would you say you have in leaders of major companies?	.03	-1.66	.12	-.77	1.54	-.68	-.77	-1.30
How much confidence would you say you have in leaders of the military?	-.73	-1.20	.89	-.74	.58	.04	-1.28	-2.05
Age	2.11	-.81	.87	-1.35	.07	-1.88	-1.35	-.28
Education	-1.35	-1.23	-.88	-.39	.76	1.37	1.03	1.57
Income	-2.83	-.82	.55	1.33	-1.05	-2.83	-1.06	.09
Marital status								
Married	-2.01	-.81	.57	-.43	.81	-3.10	-.62	.19
Divorced or separated	.19	2.27	-.75	1.14	-.18	-1.70	.01	1.33
Living together	-.92	1.45	-.53	1.06	-.53	-.92	2.64	-.13
Single	.09	.19	-.53	.38	-.39	3.99	.62	-.34
Ethnic Group								
Caucasian	-1.80	-2.65	.63	-1.06	.64	.11	.11	.11
Other (e.g., Oriental)	-1.22	-.22	-.72	-.22	-.22	-.22	1.76	1.26
Social class								
Lower	1.16	2.01	.16	1.55	-1.23	-.07	-.38	-.85
Middle	-1.29	-2.52	1.02	-.52	-.52	.09	.55	-.06
Upper	-.54	-.78	-.61	-1.35	1.57	.03	.11	.92
Political outlook								
Conservative	.63	-.94	.17	-1.20	1.48	-.87	-1.46	-1.00
Middle of road	-.78	1.19	.79	.99	-.88	-1.78	-.29	-1.58
Liberal	-.12	.12	-.68	.49	-.80	1.90	1.53	1.96

Note: Respondents rated the first 22 items (except No. 16) on 6-point scales ranging from Disagree Strongly to Agree Strongly.

Table 2
Percentage of Respondents in Each VALS Type With the Three Measuring Systems

VALS type	Measuring system			
	National VALS, %	Actual VALS, %	Empirical mirror, %	Demographically adjusted empirical mirror, %
Survivor	4	3.0	13.8	6.6
Sustainer	7	8.4	3.6	0.6
Belonger	35	10.2	12.0	9.6
Emulator	9	5.4	3.0	5.4
Achiever	22	3.0	16.2	4.2
I-Am-Me	5	62.3	19.8	54.5
Experiential	7	4.8	23.4	12.6
Societally conscious	9	3.0	8.4	6.6
Total	98.0	100.0	100.0	100.0

Discussion

Methodology and International Value Research

Values are difficult to measure even within homogeneous cultures. Much recent research on consumer values has emphasized methodological concerns (e.g., Beatty, Kahle, Homer and Misra 1985; Homer and Kahle in press; Kahle, Beatty, and Homer 1986). Values are among the most abstract of social cognitions (Kahle 1984), thus rendering them elusive to highly concrete measure. Most values are viewed positively by most people, thus leading to positive bias and ceiling effects. Irrelevant needs, salience, superordination, impression management, social change, excessive abstractness, and ambiguity of meaning may all distort self-reports of values.

A number of additional methodological challenges exist with cross-cultural surveys and research. Researchers must convey the meaning of questions accurately and in a way respondents can grasp. They must correctly incorporate subtleties and nuances of language. Comparative questionnaires should be translated and back translated by bilingual nationals. Researchers also must select the most effective method of communication (e.g., mail, telephone, or personal interview) within a culture. Construction of an adequate sample is potentially far more complex for researchers in some countries than in others, because sources similar to the ones used to describe populations in some countries may not be available in others. Even with adequate questionnaires, people in some cultures may simply think in ways too different to isolate within a conventional research context. Finally, certain questions to which some cultures are willing to respond may be considered sensitive or inappropriate by others. The generality of the entire approach of cross-national research still needs further demonstration in a variety of nations (the emic-etic problem applied to methodology).

Problems With VALS

The VALS methodology may be particularly prone to some of the above problems, as well as having its own unique problems. Both the collection and analysis of data are a fairly tedious process. The translation and back-translation of 34 items (which is the short form of VALS) along with the various other questions asked in the questionnaire will be time consuming and can lead to a good deal of cultural bias. The meanings and nuances of a set of attitudinal and behavioral statements will simply have a greater chance of distortion and ambiguity than simpler statements. Some of the statements seem particularly tied to the U.S. culture and need considerable modification. Earlier we noted some necessary changes we had to make in the instrument to make it fit our sample. This type of fitting might be necessary for each sample taken. For example, the new algorithm item, "Just as the Bible says, the world literally was created in six days," may simply confuse a Buddhist in Japan.

We are also concerned that the VALS algorithm is heavily dependent upon demographics. It was necessary for us to adjust our demographic questions, and this fact suggests that the VALS questionnaire would always require some adjustment if the sample is demographically non-representative in some way. Further, the meaning of demographics may vary from country to country. For example, the variance in income is much smaller in Norway than in the U.S., suggesting income contributes

less to individual differences among Norwegians. VALS' heavy dependence on demographics suggests it is not a pure measure of values or psychographics, which reduces the theoretical importance of the methodology and conceptualization.

An Alternative to VALS

One alternative to VALS is the List of Values (LOV), which was developed by researchers at the University of Michigan Survey Research Center (Kahle 1983; Veroff, Douvan, and Kulka 1981). LOV was developed from a theoretical base of Feather's (1975), Maslow's (1954), and Rokeach's (1973) work on values, in order to assess adaptation to various roles through value fulfillment. It is tied most closely to social adaptation theory (Kahle 1983, 1984). Subjects see a list of nine values, including self-respect, security, warm relationships with others, sense of accomplishment, self-fulfillment, sense of belonging, being well respected, fun and enjoyment in life, and excitement. These values can be used to classify people on Maslow's (1954) hierarchy, and they relate more closely to the values of life's major roles (i.e., marriage, parenting, work, leisure, daily consumption) than do the values in the Rokeach (1973) Value Survey (Beatty et al. 1985) or in VALS (Kahle, Beatty and Homer 1986). In the LOV method, subjects have been asked to identify their two most important values (Kahle 1983; Veroff et al. 1981), to rank the values (Beatty et al. 1985, Kahle et al. 1986), or to rate the values on a 1 to 9 interval scale from extremely important to extremely unimportant (Kahle and Homer in press).

Although LOV and VALS share some disadvantages, the advantage of LOV over VALS are numerous (Kahle et al. 1986). LOV significantly predicts consumer behavior trends more often than does VALS. LOV is easier and quicker to administer. It involves minimal computer work to analyze the findings. It is not as subject to individual interpretation, which can be a considerable problem in international research. That is, the exact phrase may be more easily retained or translated. This advantage also implies that advertising implications may be more obviously based on the findings. LOV can employ higher level (interval) statistics, also.

Conclusions

These results seem not to disprove the hypothesis, which postulates that it is possible to develop a weighting scheme to approximate VALS. The results suggest a degree of face validity for the "empirical mirror" technique of deriving weights for VALS scoring, especially when demographically corrected. The phi coefficients and other measures of association suggest empirical correspondence. Of course, the empirical mirror weights are not identical to the weights used by SRI International. But small variations in weights may not alter composite construction to any large degree (Wainer 1976; Wang and Stanley 1970). A further limitation is that SRI International periodically revises the actual weights, thus making the exact algorithm somewhat different from time to time.

Additionally, this paper addressed the many methodological problems associated with the study of values and with the use of VALS specifically. An alternative approach, LOV, is presented and compared with VALS on a number of dimensions, such as ease of use and analysis, predictive ability and interpretive/

application ability. LOV is found to be superior to VALS on these dimensions.

One of the most fundamental principles of science is public sharing of information (Ziman 1968). "Objectivity and logical rationality, the supreme characteristics of the Scientific Attitude, are meaningless for the isolated individual; they imply a strong social context, and the sharing of experience and opinion" (Ziman 1968, p. 144). The time has come to allow scientists to share research on VALS, especially because many marketing texts now promote VALS. Scientific research on VALS should be encouraged. We are just beginning to unlock important knowledge on consumer values. Which of several methodologies is most useful in marketing research can best be answered by further empirical investigation (Kahle 1985).

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Shortening the Rokeach Value Survey for Use in Consumer Research

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Abstract

Although the Rokeach Value Survey (RVS) has been widely used in marketing studies, its high degree of generality comes at some cost in consumer research applications. Intuitively, not all of its 36 value items would seem equally relevant to consumption. This research describes efforts to shorten the RVS to reflect a set of more *consumption relevant* values. Results from five samples identify a subset of 24 value items as maximally relevant to *product* consumption. A measure of value instrumentality exhibiting satisfactory psychometric properties is constructed based upon this value subset. Implications are discussed for domestic and cross cultural marketing.

Introduction

Philosophers, social scientists, and industrial leaders have long recognized the potential importance of values as influencers of human behavior. The disciplines of psychology, sociology, and cultural anthropology have suggested that values may underlie a variety of individual and collective behaviors. So too have marketers long realized the potential inherent in values and their central role in motivating and explaining consumption. However, they have been rather slow to embrace empirical research assessing specific relationships between values and consumption behaviors. Most such research has evolved only over the past decade. One of the earliest and perhaps most noteworthy studies in this vein was that of Vinson, Scott and Lamont (1977), who hypothesized a distinction between more global, underlying Rokeach-type values, and more superficial, domain-specific values. Their study served as a spring board for the rejuvenation of interest in values among many marketing researchers. That such interest continues to build is evidenced by several signs: the special conference on values and consumer behavior at the University of Mississippi in Summer 1984, and the subsequent publication of *Personal Values and Consumer Psychology* (Pitts and Woodside 1984); a special issue of *Psychology and Marketing* (Kahle 1985) devoted exclusively to values and consumer behavior; and the publication of values articles in other marketing journals (e.g., Kahle, Beatty and Homer 1986, Henry 1976; Gutman 1982; Munson and McIntyre 1979).

Values in Consumer Research: Two Traditions

A review of the marketing literature suggests that values have been used in consumer research in two primary ways: in *Value Hierarchies* (VH) and/or *Value Instrumentality* (VI) assessments. The first tradition, VH, has used values to profile consumers using some preexisting inventory or list of general human values. Several such inventories have been used (e.g., Kahle 1983; Kluckhohn and Strodtbeck 1961; Rokeach 1973). The methodological significance of such a values hierarchy is that it enables researchers to describe, in a quantitative fashion, the values of virtually any group and to compare and contrast these values with those of any other group.

Marketing researchers have used value hierarchies as a means to better understand differences between consumer groups. The most widely used value inventory in consumer research has been the Rokeach (1973) Value Survey (RVS) (see Munson 1984 for a review). Studies in this vein are numerous and would include, for example, those profiling value differences across cultural groups and the stereotypic consumer within cultures (Munson and McIntyre 1978); subcultural (Powell and Valencia 1984), and/or social class groupings (Ness and Stith 1984); studies using values to distinguish market segments (Vinson and Munson 1976); and studies on the relation of antecedent life cycle variables to values (Crosby, Gill and Lee 1984). Other research has focused on alternative ways to measure the value hierarchy, and compared rank ordering, scaling, and paired comparisons of individual Rokeach value items (Munson and McIntyre 1979; Reynolds and Jolly 1980).

Within the Rokeach Value Survey two sets of values are distinguished, one composed of 18 Terminal values, or desired end states of existence (e.g., an exciting life, national security); the other composed of 18 Instrumental values, or preferable modes of behavior (e.g., being ambitious, independent). A value is defined as an enduring prescriptive or proscriptive belief that a specific end state of existence or specific mode of conduct is preferred to an opposite end state or mode of conduct. The values within each respective hierarchy are rank ordered according to their importance as guiding principles in the individual's life. The output of this ranking procedure is a values hierarchy.

The second tradition, the Values Instrumentality approach, has focused on the means-end chain linking values and behavior. Values are viewed as desired goals or ends of consumption, and products and/or product attributes are perceived to be the means to realizing those values. The likelihood of consumption is felt to increase when the values associated with the product match those which are central to the consumer. The VI approach is evidenced, for example, in the conceptual arguments of Howard (1977) and Howard and Woodside (1984), as well as in the empirical works of several others (e.g., Gutman 1982; Reynolds and Gutman 1984; Prakash and Munson 1985; Vinson, Scott and Lamont 1977).

There are some important distinctions between the VH and VI traditions. Unlike the VH approach, VI research is not necessarily concerned with indexing the consumer's value profile (i.e., values hierarchy) on an inventory of underlying values general to all human decision making (such as the RVS). Rather, the focus of VI is on identifying those "values" which can be linked to product attributes. Such values are not necessarily global human values, but can be less general, less abstract, and perhaps more consumption oriented outcomes. A product is a means to achieve some end, and features of the product (attributes) cause consumers to relate certain products to certain values.

The desirability of a measure of values instrumentality becomes all the more apparent when one realizes that this tradition is quite consistent with two other research orientations: Ostrom and Brock's (1968)

involvement model, and Rosenberg's (1956) model of attitude structure. Both of these formulations suggest that some outcome, behavior or state is based upon an expectancy x value relationship. Whereas Ostrom and Brock contend that involvement is the product of value instrumentality weighted by value centrality, Rosenberg contends that one's attitude toward an object can be defined as the product of the object's value importance weighted by its perceived instrumentality.

Each of these two values research traditions is not without its problems. Researchers using the VH approach have noted that many of the individual value items in the RVS seem *a priori* to be largely irrelevant to consumption behavior (Beatty et. al. 1985; Vinson and Munson 1976; Vinson, Scott and Lamont 1977; Prakash and Munson 1985; McQuarrie and Langmeyer 1985). Indeed, findings from several studies confirm that many of the individual value items are unrelated to the marketing behavior of interest. Moreover, when sample sizes are expected to be small, valuable degrees of freedom may be lost when using such techniques as regression or discriminant analyses to determine possible differences in the value hierarchies of various groups. Furthermore, irrespective of sample size considerations, values perceived to be unrelated to consumption may increase the likelihood of respondent fatigue and error, and obscure these true relationships which are present between values and consumption (Beatty et. al 1985).

Despite these problems with the original 36 item RVS, we do not believe they would constitute sufficient incentive to shorten it, if the primary research goal were to measure traditional value hierarchies for specific populations. In such instances, the full inventory will almost always be more appropriate. Rather, the necessity and motivation to shorten the full RVS will be greatest when the research goal is to determine means-end or value instrumentality relationships, particularly where the number of product categories and attributes to be evaluated by each respondent is large.

In view of the desirability of constructing such VI measures we set out to shorten the list of Rokeach values. We chose to begin with this value inventory rather than some other, because of its widespread use in consumer research and in view of its claim to be an exhaustive set of human values. Our stance is that although the Rokeach values may serve as guides or standards for human life in general, they will not all be perceived as ends of consumption. Hence, the primary objective of this research is to identify the best set of *consumption relevant* values in the RVS and exclude those which are extraneous to *product* consumption. A shortened set of consumption-relevant, Rokeach value items could be used to facilitate several types of research applications: (1) values instrumentality studies; (2) constructing Rosenberg-type attitude measures in which the perceived instrumentality component was indexed to global values of the RVS type, as in linking attributes to values for a dynamically discontinuous innovation (McQuarrie and Langmeyer 1985); and (3) in product positioning and advertising planning concerned with identifying motivational appeals relevant to values (e.g., Pollay 1984; Tyebjee 1978).

The identification of a subset of consumption-relevant values within the broader set of human values also has intriguing implications for cross cultural research. It stands to reason that different values will be viewed as achievable through consumption activities in

different societies. Although our planned value reduction procedure is a strategy for studying value instrumentality in the United States, it is of heuristic benefit when it comes to studying cross cultural consumption. For instance, it may be possible to show that two societies differ in terms of which values they believe can be served or reached through purchase and consumption of goods and services. Hence this research may offer us an additional insight into how cultures differ and into particular marketing problems which may be faced in certain cultures.

Sample and Procedure

Data were collected from three samples in an attempt to reduce the size of the 36 item RVS (Rokeach 1973). In Sample 1, eighty undergraduates were asked to identify the 12 Rokeach values "most irrelevant" to the consumption of goods and services. Two dozen specific products were listed as examples. At a later point, these same undergraduates rated nine products on their instrumentality with respect to each value in the RVS ("Sample 2"). In sample 3, a new group of 64 undergraduates was asked to indicate which Rokeach values were "unobtainable" or could not be reached through consumption of common products and services (eight product categories with examples; e.g. electronics (television, vcr...)). A subset of Rokeach values was used in this task, eliminating both those values shown by Samples 1 and 2 to be certainly irrelevant to consumption (e.g. "forgiving") or certainly relevant (e.g. "an exciting life"). It was hoped that the shortened list would aid subjects in making more discriminating judgements about the relevance of the remaining values to consumption.

Subsequently data were collected from two large samples to determine the psychometric properties of a value instrumentality inventory that utilized a reduced version of the RVS. Sample 4 contained 714 consumers and Sample 5 contained 333 consumers. The combined sample was 42% male and 58% female, and 36% students, 64% adults. Degree of instrumentality was measured in Sample 4 by a three point scale (not related, weakly related, strongly related), and in Sample 5 by a five point scale (no, weak, some, definite, or strong relation).

Results

Identification of Consumption Relevant Values

Table 1 displays the results of the three attempts to reduce the size of the Rokeach Value Survey. For Sample 1, the quantity shown represents the number of students who indicated that the value was among the 12 *least relevant* to consumption. In Sample 2, the quantity shown represents the number of times that a product was judged to be *not instrumental* to that value (based on 80 students X 9 products). In sample 3, the quantity shown represents the number of times a value was judged to be *unobtainable* through consumption of any of a variety of products and services. The three samples, and the three different tasks, provide convergent evidence as to which values are relevant to ordinary consumption activities and which are not.

Table 2 provides a summary of these findings, in terms of the values most often judged not relevant to consumption activities across the three samples. The values viewed as irrelevant to consumption fall into three

TABLE 1
ROKEACH VALUES JUDGED TO BE IRRELEVANT, UNOBTAINABLE BY OR NOT INSTRUMENTAL TO THE CONSUMPTION OF GOODS AND SERVICES

Sample 1 (N = 80) Irrelevant		Sample 2 (N = 720) Not Instrumental		Sample 3 (N = 64) Unobtainable	
Value	Count	Value	Count	Value	Count
Salvation	76	Forgiving	710	Honest	60
World at Peace	69	Obedient	688	National Security	58
Equality	63	Loving	687	Equality	58
Forgiving	58	True	685	True	57
National Security	58	Friendship	681	Friendship	47
Mature Love	54	Salvation	678	Courageous	47
True	54	Honest	677	Wisdom	47
Friendship	52	World at Peace	670	Inner Harmony	46
Inner Harmony	50	Mature Love	669	Loving	46
Wisdom	48	National Security	664	Self	42
Honest	43	Polite	659	Controlled	37
Courageous	42	Wisdom	655	Helpful	36
Obedient	34	Courageous	640	Responsible	36
Loving	23	Logical	598	Logical	34
Polite	22	Intellectual	594	Freedom	33
World of Beauty	21	Broadminded	592	Ambitious	32
Self-Controlled	20	Self-controlled	570	Broadminded	32
Sense of Accomplishment	18	Family Security	569	World of Beauty	22
Broadminded	18	Inner Harmony	557	Capable	21
Logical	17	Helpful	557	Intellectual	20
Helpful	16	Imaginative	544	Family Security	15
Freedom	16	Capable	543	Imaginative	14
Intellectual	16	Ambitious	524	Cheerful	13
Capable	15	Responsible	511	Sense of Accomplishment	10
Self-respect	12	Freedom	506	A Comfortable Life	6
Family Security	11	A World of Beauty	497		
Imaginative	7	Independent	479	Omitted:	
Cheerful	6	Sense of Accomplishment	467	Salvation	
Happiness	6	Cheerful	449	World at Peace	
Ambitious	5	Clean	449	Forgiving	
Social Recognition	4	Self Respect	446	Mature Love	
Responsible	4	Social Recognition	350	Obedient	
A Comfortable Life	4	An Exciting Life	345	Polite	
An Exciting Life	2	Happiness	283	Happiness	
Pleasure	2	Pleasure	243	Social Recognition	
Clean	2	A Comfortable Life	185	An Exciting Life	
Independent	1			Pleasure	
				Clean	
				Independent	

broad groups: 1) those that involve religion or spirituality (e.g., "salvation"); 2) those that concern collectivities of people more than individuals (e.g., "national security"; "world at peace") and 3) those that concern traits viewed as evidence of a virtuous character (e.g., "honest"). Taken as an ensemble, these values provide a portrait of the kinds of goals that these

students viewed as unreachable through materialism. For these respondents, consumption does not lead to salvation, does not make one a better person, and cannot save the world. Summarized thus, the reduction procedure appears to have led to plausible results.

The remaining task was to fix the boundaries of the subset of consumption relevant values. This was

Table 2
SUMMARY OF ROKEACH VALUES JUDGED NOT RELATED

Values Appearing in the Bottom Quartile (Table 1) at Least Twice

<u>Terminal</u>	<u>Instrumental</u>
A world at Peace	Forgiving
Equality	Honest
Mature Love	
National Security	
Salvation	
True Friendship	
Wisdom	

Values Appearing in the Bottom Half (Table 1) at Least Twice

<u>Terminal</u>	<u>Instrumental</u>
Inner Harmony	Broadminded
Courageous	
Logical	
Loving	
Obedient	
Polite	
Self Controlled	

Values Appearing in the Bottom Half (Table 1) at Least Once

<u>Terminal</u>	<u>Instrumental</u>
A Sense of Accomplishment	Helpful
A World of Beauty	Intellectual
Family Security	Responsible

necessary so that a value instrumentality inventory could be constructed. We did not feel that the results of the reduction procedure were sufficiently clear as to be applied mechanically. Rather, we exercised our judgement concerning values that appeared to lie on the boundary of relevance. For aesthetic reasons, we decided to choose exactly 24 Rokeach values for inclusion in the value instrumentality scale. The elimination of 12 values appeared to us to strike a balance between the goals of reducing the RVS to a manageable size, and retaining as comprehensive a picture of human values as possible.

Table 3 displays the 24 values we deemed most relevant to consumption, and the 12 that were set aside. Note that although "equality" and "wisdom" were generally viewed as irrelevant, in sample 1, 2, and 3, an earlier scale by McQuarrie and Langmeyer (1985) had included both. Hence, to fill out the 24 value set these two values were retained, as were the Instrumental values "broadminded," "logical," and "self-controlled," as possibly relevant to consumption.

Psychometric Properties of the Value Instrumentality Inventory.

In Samples 4 and 5, respondents rated the degree to which specific products were perceived as instrumental to obtaining the 24 consumption relevant values. These ratings were summed to form a Value Instrumentality Inventory (VII). Such an inventory has the potential to measure degree of involvement with products (Ostrom and Brock 1968). The 24 item sum shows a high degree of internal consistency in both samples, with coefficient alpha equal to .94 and .95, respectively. Of course, this

TABLE 3
VALUES JUDGED RELEVANT AND IRRELEVANT TO CONSUMPTION

Retained Values (24)

<u>Terminal</u>	<u>Instrumental</u>
A Comfortable Life	Ambitious
An Exciting Life	Broadminded
A Sense of Accomplishment	Capable
A World of Beauty	Cheerful
Equality	Clean
Family Security	Imaginative
Freedom	Independent
Happiness	Intellectual
Inner Harmony	Logical
Pleasure	Responsible
Self-Respect	Self-Controlled
Social Recognition	
Wisdom	

Rejected Values (12)

<u>Terminal</u>	<u>Instrumental</u>
A World at Peace	Courageous
Mature Love	Forgiving
National Security	Helpful
Salvation	Honest
True Friendship	Loving
	Obedient

consistency results in part from the fact that most products are viewed as not instrumental to virtually all the 24 values.

In Sample 5 principal components factor analysis with varimax rotation revealed three factors with eigenvalues greater than 1.00. As shown in Table 4, this factor structure is readily interpretable. The first factor identifies products that help to fulfill adult responsibilities (e.g., "responsible," "self-controlled"); the second those that fulfill lifestyle goals (e.g., "exciting life," "comfortable life"); and the third those that are perceived to remove tension (e.g., "inner harmony," "cheerful"). It appears that the Value Instrumentality Inventory can help describe the motivations that govern purchase of specific products.

In the third test, the ranking of the products in terms of the degree to which they were viewed as instrumental to valued goals was compared across the two samples. As Table 5 shows, the ranking of the products conforms to intuitive notions about how involving these products would be. The size of the correlation between the scores accorded to the 12 products in the two samples adds to our confidence that the VII yields stable scores ($r = .98, p < .001$).

Discussion and Implications

The primary objective of this study was to shorten the Rokeach Value Survey to reflect a set of more *consumption relevant* values. Such an inventory would be particularly germane to researchers attempting to measure *value instrumentality*, as opposed to *value hierarchies*. Toward this end, three alternative reduction procedures were used. The result of these convergent reduction procedures is a subset of 24 value items identified as maximally relevant to consumption. As anticipated, many values in the original RVS, both Terminal and Instrumental, were found to be largely irrelevant to, or unobtainable via consumption behavior

TABLE 4
FACTOR ANALYSIS OF THE 24 ITEM VALUE
INSTRUMENTALITY INVENTORY

	Factor 1	Factor 2	Factor 3
Responsible	.79		
Intellectual	.75		.36
Capable	.74		
Logical	.71		.40
Self-controlled	.69		
Wisdom	.66		.42
Family security	.63	.40	
Independent	.61	.50	
Ambitious	.59	.48	
Equality	.57		
An exciting life		.84	
Pleasure		.80	
A comfortable life		.76	
Happiness		.72	.45
Social recognition	.39	.65	.35
A sense of accomplishment	.52	.63	
Freedom	.44	.61	
Clean			.68
Inner harmony		.34	.64
Imaginative		.40	.61
A world of beauty			.59
Cheerful		.42	.58
Self-respect	.36	.37	.57
Broadminded	.48		.52

Note: analysis of Sample 5 data (1063 cases from 333 people).

TABLE 5
TWELVE PRODUCTS RANKED ACCORDING TO
DEGREE OF VALUE INSTRUMENTALITY ON THE VII

Sample 4		Sample 5	
Product	Mean Score	Product	Mean Score
Automobile	20.91	Automobile	41.76
Business Suit	18.08	Business Suit	34.74
Restaurant	17.55	Restaurant	29.54
Credit Card	16.62	Credit Card	31.38
Hair Cut	15.20	Hair cut	30.46
Walkman		Walkman	
Stereo	9.76	Stereo	19.65
Toothpaste	7.99	Toothpaste	15.29
Detergent	5.55	Detergent	17.83
Soft drink	4.66	Soft drink	12.81
Motor oil	2.73	Motor oil	7.95
Potato chips	2.14	Potato chips	8.01
Canned corn	2.01	Canned corn	6.03

Note: for Sample 4, scale values ranged from 0 — 2, While for sample 5, they ranged from 0 — 4.

(e.g., world at peace, mature love, salvation, courageous, forgiving, honest, etc.). Using this 24 item subset, we were able to construct a Values Instrumentality Inventory (Table 4) which demonstrated satisfactory psychometric properties with respect to its internal consistency, stability over two independent samples, and factor structure. Furthermore, the rank ordering of the 12

products investigated based on their mean value instrumentality scores derived from the VII was consistent with expectations. For example, as shown in Table 5, automobiles show the highest value instrumentality, while for toothpaste it is moderate, and potato chips it is low.

The availability of this shortened, more consumption oriented VII suggests important practical implications. It should be of interest not only to those studying means-end value linkages using the more traditional approach (e.g., Gutman 1982), but also to researchers working in other areas. Value instrumentality is a central concept in Rosenberg's (1956) attitude model and Ostrom and Brock's (1968) model of involvement. Moreover, values instrumentality data can be highly useful in formulating product positioning and advertising strategies (e.g., Pollay 1984), with the objective being to link product attributes to consumption benefits or consequences, and ultimately to the consumer's underlying values.

Although we performed this value reduction procedure for the pragmatic goal of developing a more efficient and direct way of measuring value instrumentality, we suggest that the reduction procedure, when treated as an end in itself, could be a useful approach to studying cross cultural differences and the role of purchases and consumption in human life. For example, the Balinese in Indonesia, or the Chinese in Singapore, probably do not look to consumption of goods for the same values as consumers in the United States. In fact, subcultures within the United States may also exhibit major differences in product-value instrumentality relationships. Would Hispanics in San Antonio view the same values as relevant to consumption as the Hispanics in Miami, or the Pennsylvania Dutch? Would consumers in the Midwest or Southeast hold the same values to be relevant to consumption as those found for the West Coast consumers in this study? Would all three of the latter groups perceive the same product as instrumental to the same value or value set?

Questions such as the above point up a major limitation of this study. Its results may not be generalizable to populations and product classes beyond those investigated here. It is axiomatic that values are *culturally derived*. Therefore, both value hierarchies and subsequent value instrumentality inventories will in all probability exhibit heterogeneity across different cultures and subcultures. This reality raises important cautions for values researchers and international marketers. It advises against the wholesale transportation of the original RVS, or any shortened derivative assessing values instrumentality developed in the United States, to another country or nation state. Although Rokeach (1973) suggests that the RVS is applicable to other "Western" countries, this proposition remains relatively untested. Hence, the approaches used here for values reduction, as well as the shortened Values Instrumentality Inventory, need to be tested for their generalizability on a country by country basis.

The 24 item measure presented here (Table 4) is not intended to constitute "the" values instrumentality inventory for all product classes or areas of consumption. We can well imagine that a value generally regarded as irrelevant to consumption and omitted from our inventory could assume prepotency for some products in some situations. For example, "salvation" may be assumed to be the most consumption

relevant value in a book publisher's efforts to market the Bible. Such examples notwithstanding, this research and the values reported in Table 4 probably represent a "reasonable first cut" at reducing the original 36 item RVS to a more consumption relevant list.

Future research might extend the present study by investigating: (1) whether the value reduction procedures used here are applicable across other populations, both cross culturally and subculturally; (2) whether the values identified here as maximally relevant (or irrelevant) to consumption are generalizable to other cultures and subcultures; and (3) whether terminal and instrumental values exhibit differential patterns, across cultures or subcultures, in their respective relationships to value instrumentality judgements.

In conclusion, the values reduction methods investigated here can be used to purge the RVS of values which are largely irrelevant or tangential to most consumption behavior. The shorter, more consumption oriented VII may be particularly useful to researchers concerned with measuring value instrumentality relationships.

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Towards Some Standardized Cross-Cultural Consumption Values

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Abstract

The results of most attempts to relate cultural (and subcultural) values — a group and general behavioral construct, to a consumer's choice — a personal and consumption oriented construct, are weak. This paper proposes another alternative. We hypothesized and used consumers' perceived attribute importance along four product categories as consumption value measures. Consumers' perceived attribute importance along clothing, food, appliances, and household supplies were surveyed from consumers of five Asian Pacific regions. This paper discusses the premises behind our proposition. How consumption values differ in clothing across the five regions is described.

Introduction

In consumer behavior literature cultural values have long been recognized as a powerful force shaping consumers' motivation, lifestyle, and product choices. The value system is thought to include sets of beliefs, attitudes, and activities to which a culture or subculture subscribes, and is reinforced by rewards and punishments to those who follow or deviate from these guidelines (Rokeach 1973). In recent literature, the value system has been expanded to include the "tool kit" of habits, skills, and styles from which people construct strategies of action (Swidler 1986).

There are two major agendas in cultural (and subcultural) value research in consumer psychology. The macro orientation investigates how the cultural values affect consumption behavior of groups of consumers. The micro orientation tries to understand how this group construct affects individual consumers' choice in the market place. This latter orientation is quite ambitious because these two construct are conceptually different. The problem is compounded for researchers who are interested in these topics cross-culturally. Table 1 below summarizes the conceptual differences between the two constructs.

Table 1
Conceptual difference between cultural value and a consumer's consumption behavior

Dimension	Cultural Values	A Consumer's Choice
1. Grouped vs Individual	Grouped	Individual
2. General vs Specific	General Behavior	Consumption Oriented
3. Cultural Difference	Specific to one culture	Specific to another

Researchers have responded to this challenge in two major ways. First, researchers have adapted scales developed from other disciplines. In particular Munson

and his colleagues adapted the Rokeach Value Scales (RVS) to different cultural groupings (Munson and McIntyre 1979) and product choice contexts (Munson and McQuarrie 1987). Kahle and his colleagues (e.g. Kahle 1986) used very similar approach with Values and Lifestyles Scales (VALS) originally developed by Mitchell (1983).

Another approach is to develop value measures that may uniquely apply to consumption context. In particular McCarthy and O'Guinn (1987) employ the anthropological approach and try to develop cultural value measures from behaviors of consumers. Their approach resembles the attempt by Belk and Pollay (e.g. Belk and Pollay 1985, Pollay 1986) who content analyzed advertisements from different cultural groups (or societies) to understand the societies' values.

Yet the results of most attempts to relate value systems to a consumer's choice were discouraging (Munson 1986). To a certain extent the lack of encouraging results is understandable. As suggested in Table 1 there are three dimensions bridging cultural values and a consumer's choice. Each dimension offers its specific challenge. It is difficult to speculate what the challenges are as understanding in the topic is still emerging, however research experiences in other consumer topics along similar dimensions may provide some insights into the difficulty value researchers encounter.

For example previous efforts to relate group constructs such as social class and individual product choice (Martineau 1958) reflect the difficulty of moving along dimension 1 (from group behavior to individual behavior). Though some insights were generated through these attempts researchers soon found it is difficult to predict from consumers' social class their choice behavior. A consumer's social class fails to incorporate the changes in a consumer's behavior.

Earlier work that tries to relate general attitude and to specific behavior reflects the difficulty along dimension 2 (from general behavior to specific consumption behavior). For example the failure to use a consumer's general attitude to predict his/her choice behavior led Fishbein to reconceptualize the attitude construct as behavioral specific attitude (Fishbein 1972).

And finally the many well known mistakes in cross-cultural research and practices reveal the problems of moving along dimension 3 (from one culture to another).

Perceived Attribute Importance as Consumption Value

In face of these challenges our study's objective is to find some cultural measures that may provide a link between cultural values and a consumer's choice. We propose that perceived product attribute importance may be appropriate. There are a number of reasons. First, a consumer's perceived attribute importance measures his/her motivation behind the product choice and hence may reflect the cultural values he/she subscribes. Second, perceived attribute importance has long been known as an important predictor of a consumer's purchases. Its role in Rosenberg's attitudinal model

(Rosenberg 1956) and ideal point models of consumer preference (e.g., Lehman 1971) reflects its importance. Third, comprehensive consumer models (e.g., Engel, Blackwell and Miniard 1986) suggested that a consumer's preference, in which perceived attribute importance is a component, is affected by his/her social and cultural environment. This suggests that the construct is able to translate the group influence to a consumer. Finally the construct is simple and likely to be universal across different cultures so that it can be used cross-culturally (e.g. Engel, Blackwell, and Minard 1986).

A number of premises underlie our proposal. They include,

1. Cultural values are dynamic and they originate from the ethnic and social groupings to which people belong. They are also affected by the economic, political, and technological environment people are living in,
2. Cultural values that a person subscribes to can be expressed in some of his/her consumption behavior, and
3. Some common structures in consumption values exist cross-culturally, though
4. Consumers from different cultures may use different product attributes to express similar underlying consumption values.

Expected Results

In this paper we surveyed consumption values of consumers from five Asian Pacific regions using product attribute importance. According to our first premise the consumers' consumption values may differ because of differences in their ethnic background and the economic,

political, and technological environments they are in. Table 2 describes the regions' characteristics.

Our second premise suggests that different products may express a consumer's value system in different ways. Of the four product categories investigated in this study, they may be affected in different degrees by the ethnic origin and the environmental forces that impact the regions. Table 3 below summarizes how each product category may be affected by these forces.

As a result we expect consumption values expressed in each product category to differ among different pairs of countries/regions investigated.

Research Design and Procedure

Five Asia Pacific regions including Japan(JPN), Hong Kong(HK), Singapore(SGP), South Korea(KRA) and Taiwan(TW) were selected to test the validity of our paradigm. Consumers were invited by local interviewers in each of the above regions to respond to a pre-designed questionnaire. The interviews were conducted in shopping malls of major cities in each region.

The questionnaire had four sections. The first section contained 23 Likert scales measuring respondents' agreement to different dimensions of the respondents' shopping and consumption behavior. The second section contained 18 Rokeach Instrumental Value Scales. The third section contained perceived attribute importance (ranging from 23 to 30 attributes) in four product categories. These product categories included clothing, appliances, household supplies, and food (packaged uncooked). The last section contained multiple choice questions on respondents' gender, age, education level and occupation.

The product attributes were obtained from focus group discussions by housewives of different nationalities who came to U.S. less than 1 year. One focus group was held for each region including Taiwanese, South Korean, and Japanese. Translators

Table 2
Characteristics of the Five Asia Pacific Countries

Countries	Characteristics of the Different Environments			
	Economic ¹	Political	Ethnic	Technological
Japan	Very High	Open	Japanese	Highly Developed
Hong Kong	High	Open	Chinese	Very Developed
Singapore	High	Some Ctl	Mainly Chinese	Very Developed
South Korea	Med	Control	Korean	Developed
Taiwan	Med	Control	Chinese	Developed

¹ represents the living standard among the Asian countries.

Table 3
Hypothetical Impacts of Different Environmental Forces on Product Categories Investigated

Product Categories	Impact from Different Environments			
	Ethnic	Economic	Political	Technological
a. Clothing	High	High	Low	Low/Med
b. Food	High	Med	Low	Low
c. Household Appliance	Low	High	Low	High
d. Household Supplies	Med	High	Low	Low/Med

Table 4
Socio-Demographic Characteristics of the Respondents

Characteristics	Countries/Regions				
	Japan	Hong Kong	Singapore	South Korea	Taiwan
Number of Resp.	180	200	224	200	190
Average Age	31.8	31.9	29.9	31.7	29.9
Sex					
Male	41.7%	50.5%	43.5%	32.5%	48.1%
Female	58.3%	49.5%	56.5%	67.5%	51.9%
Education					
Primary Schl.	.0%	16.6%	6.3%	.0%	2.7%
High Schl.	1.7%	59.8%	41.7%	.5%	39.6%
Some College	17.8%	14.6%	27.4%	12.6%	32.6%
Univ. or above	80.0%	9.0%	24.7%	86.9%	25.1%
Occupation					
Blue Collar	1.7%	14.4%	6.5%	.5%	9.6%
White Collar	21.9%	16.5%	40.0%	26.7%	24.1%
Professional	22.5%	23.2%	21.9%	7.9%	25.7%
Student	38.2%	28.9%	22.3%	22.0%	26.2%
Others	15.7%	17.0%	9.3%	42.9%	14.4%

(from 1 to 3 for each region) were used to translate the questionnaire for each region. Back translation was used for the Japanese and the Korean version. The Singaporean version was examined by a Singaporean researchers while both the Taiwanese and Hong Kong version was examined by two authors whose mother tongue is Chinese. Local interviewers were recruited and trained. About 200 samples of response were obtained from each country/region. Table 4 describes the socio-demographic characteristics of respondents.

The samples showed marked differences in both education and occupation. Both Japanese and South Korean samples had relatively high percentages of university educated respondents and very low percentages of blue collar workers. This may partly reflect the population characteristics in these two cities since the surveys were conducted in major cities in these two countries.

Findings

In this paper we limit our discussion to the clothing results only. The 30 attributes on the clothing consumption values were factor analyzed country by country (using principal component method with varimax rotation). The Japanese, Singaporean and Taiwanese samples had eight factors while the Hong Kong sample had nine factor and the South Korean sample had six factors whose eigen values were higher than one. A closer examination on both the variance explained by each factor and its eigenvalue suggested that we should include only the factors whose eigenvalues were higher than one.

As has been hypothesized in our fourth premise we do not expect identical sets of product attributes to appear on each corresponding factor, but the factors may represent similar underlying consumption values. Hence the factors were named separately for each country. Tables 5 to 9 summarize the factor analysis results for each of the five regions. The tables (5 to 9) reports only those attributes whose factor loadings were higher than 0.3. The attributes in the factors suggested that the factors can be further classified into instrumental, aesthetic and social dimensions.

There were two factors in the instrumental dimensions. The first factor contained attributes such as

practical, comfortable, durable, and convenient. It represented the basic needs consumers look for in their clothes. The second instrumental factor had high loadings in attributes such as tasteful, quality, and neat. It represented the higher level instrumental needs consumers place on their clothes.

The two factors were distinct for the Japanese, Korean and Taiwanese samples suggesting that the higher level needs like quality were evaluated differently. The two factors were combined in the Hong Kong and Singapore samples. This tends to suggest that the higher level needs are as important as the basic needs themselves in these two countries.

Again there are also two factors in the aesthetic dimension. The first factor contained attributes such as pretty, unique, glamorous, and luxurious. It represented the basic aesthetics elements in the clothes. The second factor had high loadings in attributes such as sexy, romantic, and passionate. It represented the mood (or the feelings) expressed by the clothes. The factors were distinct in both Hong Kong and Singapore while they were combined in Korea and Taiwan sample. The Japanese sample had the basic aesthetic factor but the mood factor was combined with the high level instrumental needs.

The social dimension is the least homogeneous and the most interesting. There were as many as four factors in this dimension and the five regions exhibited different factor patterns suggesting each region had its unique social characteristics. Hence the consumers used their clothes to express the intricacies of their positions in the societies. The first factor had high loadings in modest, moral, and mature. It reflected the morality elements in the clothes. The second factor had high loadings in social acceptance and popular suggesting the acceptance element in the social dimension. The third factor had high loadings in popular, modern, and traditional reflecting the trendiness element. Finally the fourth factor contained attributes such as status and face. It represented the status element in the social dimension. In general Hong Kong, Singapore, Taiwanese and Korean had three factors while the Japanese had all four factors distinct from one another. This result is not totally unexpected. Literature on Japanese life style and their

Table 5
Factor Analysis Results for the Japanese Sample

	Factor							
	1	2	3	4	5	6	7	8
Factor 1 (Aesthetics) explained 25.7% variance								
ENJOYMENT	.82185							
ROMANTIC	.74358		.30749					
UNIQUE	.74260							
PRETTY	.60470							
MODERN	.53131						.40437	
YOUTHFUL	.42225		.35225			.33790		
Factor 2 (Instrumental : Basic Needs) explained 13.7% variance								
DURABLE		.80774						
CONVENIENT		.77733						
PRACTICAL		.74001						
COMFORTABLE		.68727						
INEXPENSIVE	.42459	.42991						-.37892
Factor 3 (Social : Acceptance and Instrumental : Higher Level Needs) explained 6.6% variance								
NEAT			.76258					
RESPECTFUL	.41016		.69788					
SOACCEPTED			.64117					
PASSIONATE		.31062	.58026					
QUALITY		.39987	.45947					.43860
Factor 4 (Social : Morality) explained 6.0% variance								
MODEST				.87646				
MORAL				.79880				
MATURE				.65987	.31534			.33260
PROUD				.65317				
Factor 5 (Simple) explained 4.7% variance								
SIMPLE					.74875			
GLAMOROUS	.40573				.63759			
TASTEFUL				.41669	.55526			
Factor 6 (Fit My Status) explained 4.2% variance								
FACE SAVING						.80390		.33930
STATUS	.36562					.61496		
Factor 7 (Social : Trendiness) explained 3.8% variance								
TRADITIONAL							.82423	
POPULAR						.44239	.55316	
Factor 8 (Value) explained 3.4% variance								
VALUE								.69607
LUXURIOUS	.48666						.47835	.49919
SEXY	.39515							.47644

social structure had suggested that it had the most complicated structure.

Aside from the factors in these three dimensions other factors for each of the regions exist. In general these factors explained a low percentage of variance (which ranged from 3.4% to 4.7%) in the data although they have eigenvalues higher than one. They included simple (4.7%) and value (3.4%) for Japan; neat (4.3%), modern (3.8%), simple (3.6%) and important (3.5%) for Hong Kong; value (3.4%) and neat (3.4%) for Singapore; glamorous (4.0%) for Korea; and enjoyment (4.0%) and inexpensive (3.4%) for Taiwan.

The above findings suggest that consumption value structures are not identical across the regions, yet a

common structure does exist and it dominates in these regions, hence pooling all five regional samples is needed. When all the samples were factor analyzed together six factors with eigenvalues greater than 1 were obtained. The six factors can be classified again in the instrumental, aesthetic and social dimensions. Table 10 below describes the factor loadings of the attributes higher than 0.3.

Compared with the country by country result factors belonging to the same dimensions were collapsed together. In particular the aesthetic and mood factors, the basic and high level factors and the social acceptance

Table 6
Factor Analysis Results for the Hong Kong Sample

	Factor								
	1	2	3	4	5	6	7	8	9
Factor 1 (Aesthetics) explained 19% variance									
LUXURIOUS	.75224								
PROUD	.74361								
STATUS	.74161								
SAVING FACE	.71022								
ROMANTIC	.64865				.31734				
GLAMOROUS	.63118				.31249				
PRETTY	.51003					.47024			
UNIQUE	.50903						.35136		
Factor 2 (Instrumental : Basic and High Level Instrumental Needs) explained 15.3% variance									
CONVENIENT	.76558								
DURABLE	.67931	.30874							
PRACTICAL	.67197								
QUALITY	.65394								
COMFORTABLE	.64792				-.30282	.33134			
Factor 3 (Social : Trendiness) explained 6.3% variance									
TRADITIONAL			.76566						
POPULAR			.68492				.30801		
MATURE			.54673						-.33020
Factor 4 (Social : Acceptance and Morality) explained 5.0% variance									
ENJOYMENT				.61325				.37423	
MORAL			.47090	.60561					
SOACCEPTED				.54835			.32872		
VALUE		.42749		.51687					
MODEST			.44843	.45901				.37157	
RESPECTFUL	.30011			.45460			-.30988		
Factor 5 (Aesthetics : Mood) explained 4.4% variance									
PASSIONATE					.71114				
SEXY	.38453				.64185				
Factor 6 (Neat) explained 4.3% variance									
NEAT						.73954			
YOUTHFUL	.34563					.47231	.42333		
Factor 7 (Modern) explained 3.8% variance									
MODERN							.75661		
Factor 8 (Simple) explained 3.6% variance									
SIMPLE								.81291	
Factor 9 (Inexpensive) explained 3.5% variance									
INEXPENSIVE									.80868
TASTEFUL	.32435		.37399			.34900			-.51118

and morality factors were combined into one factor for each dimension. This suggests that by pooling the five regions together some of the finer classification of the consumption values for each region were destroyed yet the important dimensions were preserved.

In addition to the three basic dimensions two factors including enjoyment and value were obtained. Though both factors can be traced to the regional results, it is inappropriate to assume that each region had these factors.

Conclusion

The preliminary results provide some support of using product attribute importance as consumption value measures in the five Asian regions surveyed. In particular it was found that consumers from the five Asian regions possess patterns of consumption values unique to themselves. Perceived attribute importance were able to obtain a common structure that cuts across the regions. The result tend to agree with some of the premises proposed in the study.

Table 7
Factor Analysis Results for the Singapore Sample

	Factor							
	1	2	3	4	5	6	7	8
Factor 1 (Instrumental : Basic and High Level Needs) explained 25.4% variance								
CONVENIENT	.78743							
PRACTICAL	.78538							
COMFORTABLE	.78353							
DURABLE	.77766							
QUALITY	.53410			.42039				
INEXPENSIVE	.50232					.36898	.35979	
Factor 2 (Mood) explained 12.8% of variance								
SEXY	.79082							
ROMANTIC	.75767							
PASSIONATE	.72304							
Factor 3 (Social : Morality) explained 7.7% of variance								
MORAL			.79097					
MATURE			.72968					
MODEST			.67443					
PROUD	.48157		.54922		.32109			
SIMPLE			.43310		.36867		.37808	
Factor 4 (Aesthetics) explained 5.2% of variance								
UNIQUE		.30754		.73953				
TASTEFUL	.33931			.70615				
PRETTY				.70005				
MODERN				.51157				
LUXURIOUS	.37239		.44454		.40512			
Factor 5 (Glamour and Social : Acceptance) explained 4.3% of variance								
GLAMOROUS				.70391				
YOUTHFUL				.68917				
SOACCEPTED				.62548			.42793	
SAVING FACE	.31419			.52527				
Factor 6 (Social : Trendiness) explained 4.1% of variance								
TRADITIONAL						.76211		
POPULAR						.68716		
STATUS	.39188			.31248		.45170		
Factor 7 (Value) explained 3.4% of variance								
VALUE							.70284	
RESPECTFUL	.32804	.45850					.48313	
Factor 8 (Neat) explained 3.4% of variance								
NEAT								.76310
ENJOYMENT	.42414							.52547

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Table 8
Factor Analysis Results for the South Korea Sample

	Factor					
	1	2	3	4	5	6
Factor 1 (Fits My Status and High Level Instrumental Needs) explained 30.1% variance						
MATURE	.77723		.36052			
YOUTHFUL	.74360			.32402		
PROUD	.70024			.35363		
RESPECTFUL	.67792					
TASTEFUL	.59149	.44694				
MODERN	.54315	.40184	.34089			
NEAT	.48577		.45571	.37125		
QUALITY	.47018		.43052			-.35337
VALUE	.45615		.38405	.31014		
STATUS	.39349	.31672		.38619		
Factor 2 (Aesthetics) explained 13.4% variance						
LUXURIOUS		.74366				
ENJOYMENT		.73172				
PRETTY		.71671				
PASSIONATE	.36256	.68477				
SEXY		.68037				
ROMANTIC		.67010				
UNIQUE		.66334				
Factor 3 (Instrumental : Basic Needs) explained 7.2% variance						
COMFORTABLE			.83556			
PRACTICAL			.79682			
CONVENIENT	.38233		.75716			
DURABLE	.39965		.70666			
INEXPENSIVE			.54908		.38308	-.37588
Factor 4 (Social : Acceptance and Morality) explained 4.6% variance						
SIMPLE			.70132			
MORAL			.60388	.33286		
SOACCEPTED		.49249	.55112	.31953		
MODEST			.54222	.30539		
SAVING FACE			.34205	.49381		.47761
Factor 5 (Social : Trendiness) explained 4.5% variance						
TRADITIONAL					.74405	
POPULAR					.70264	
Factor 6 (Glamour) explained 4.0% variance						
GLAMOROUS						.81232

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Table 10
Factor Analysis Results with All Five Regions

	Factor					
	1	2	3	4	5	6
Factor 1 (Aesthetics and Mood) explained 22.5% variance						
ROMANTIC	.71478					
PROUD	.68931				-.38008	
SEXY	.68143					
STATUS	.67247					
LUXURIOUS	.65212					
GLAMOROUS	.63759					
SAVING FACE	.62368					.33427
PASSIONATE	.61166					-.38827
YOUTHFUL	.56581					
UNIQUE	.55129				.42107	
MODERN	.50230					
Factor 2 (Instrumental : Basic and Higher Level Needs) explained 12.9% variance						
CONVENIENT	.77965					
COMFORTABLE	.76808					
DURABLE	.74812					
PRACTICAL	.72990					
QUALITY	.59208					
Factor 3 (Social : Acceptance and Morality) explained 5.9% variance						
MORAL			.68196	.31369		
MODEST			.63710	.32338		
SOACCEPTED			.61056			
NEAT		.38578	.58645			
SIMPLE			.57777			
RESPECTFUL	.41356		.48423			
MATURE	.37476	.32114	.38524			-.30670
Factor 4 (Social : Trendiness) explained 4.9% variance						
POPULAR				.73445		
TRADITIONAL				.67232		
INEXPENSIVE		.38754		.44395		
Factor 5 (Enjoyment) explained 4.8% variance						
ENJOYMENT					.72805	
PRETTY	.35771				.57997	
Factor 6 (Value) explained 3.8% variance						
VALUE		.30815				.67712
TASTEFUL	.35155	.31776				-.37668

Coping With the Uncertainty of Consumer Markets
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Abstract

Uncertainty of demand is a problem for managers because it limits their ability to plan the efficient and effective use of resources. Uncertainty refers to the degree to which managers cannot anticipate or accurately predict future states of the market (Pfeffer and Salancik 1978). Because it is difficult to plan under conditions of uncertain market demand, it is in the interest of managers to minimize the degree of uncertainty in their business. Two methods for dealing with uncertainty are channel relationships and marketing programs. This paper investigates the impact of these factors on the level of realized uncertainty across departments in a retail department store.

Introduction

In 1984, *The Wall Street Journal* ran an article on the frustrations and dangers of the fashion industry. A vivid illustration of their point was Guess? jeans. Guess? became a \$200 million a year enterprise three years after persuading Bloomingdale's to carry 20 pairs of their stone-washed jeans. In comparison, Apple Computer Inc., the most talked about corporate success story of the decade, had only \$117 million in sales in its third year. Why is it that Guess? is not recognized as a leading investment opportunity by Wall Street? The problem is the customer. The primary market for Guess? is teenage girls. And as a market, teenagers cannot be trusted.

Unpredictable in their tastes and fickle in their loyalties, teen-age girls can be down right dangerous as customers. They can go through a style faster than a stick of gum, or send sales of a shampoo or snack food soaring or plunging almost overnight. Keeping up with them is a job that can humble even the most sophisticated marketer. (*WSJ*, 1984, p.1)

The academic view of the consumer is often far removed from the nightmare faced by managers. To academics, consumers are subjects with preference structures that can be observed, dissected, understood, and put back together. To the marketing manager, the consumer is the beguiling enemy who wrecks masterfully engineered strategic programs with their whimsical responses.

It's not that the consumer is purposefully out to make life difficult for marketers. Very often, consumers just don't know what they want. Ask a consumer to describe the kind of dress she wants for a special dinner party, she may mumble vaguely "Something with style." If pressed on what she means by "style," it is unlikely that she can articulate specific product attributes. Fashion is ambiguous, and consumer perceptions are influenced by environmental cues. A dress is just a dress; but a dress advertised in *Vogue*, displayed in Bloomingdale's window, and priced at \$579 is style. Unfortunately for the manufacturer and retailer, this requires a large commitment of resources before the consumer is able to evaluate the product. To the extent that the product isn't what the consumer had in mind or

its presentation is ineffective, the resources invested in producing and marketing the product have been wasted.

When demand is lower than anticipated, the problems are obvious. But problems also result from unexpectedly high demand. Unanticipated demand may entail high costs as the manufacturer scrambles to replace stock levels, paying supernormal prices for raw materials, overtime for workers, and higher freight costs to speed delivery to retailers. The unexpected demand also poses headaches for the retailer with additional costs of transporting and restocking inventories, adding and training salespeople, and disruptions in service. Responding to unanticipated demand may be a Catch-22 for the manufacturer and retailer. If they don't respond, they lose sales; if they do, they potentially waste valuable resources. To the extent that demand can not be sustained over time, their investments in additional production, distribution, salespeople, etc., are unwarranted. When channel members react to demand as independent shocks without developing a plan for minimizing uncertainty in subsequent time periods, the logistical operation and the allocation of resources become chaotic.

Ultimately, the problem with market uncertainty is that it is difficult for the manufacturer and retailer to plan the efficient and effective use of their resources. And the mismanagement of scarce resources threatens the long term survival of organizations (Pfeffer and Salancik 1978). Therefore, minimizing uncertainty is a "rational" objective and can be as important as maximizing sales or reducing costs (Child 1972)¹.

The question then becomes what factors contribute to minimizing uncertainty. Two major factors are the nature of the relationship forged between channel members and marketing programs. This research investigates the impact of these factors on the degree of uncertainty of 137 departments of a retail department store. The level of uncertainty characterizing the department is measured as the degree to which sales of one year cannot be predicted from the sales of the previous year. Departments with greater uncertainty are those where the pattern of monthly demand from the previous year does not accurately predict the pattern of monthly demand in the current year.

The premise of this research is that retail buyers minimize uncertainty by developing proactive and reactive strategies. A proactive strategy is one where the buyer, supported by suppliers, develops an effective marketing strategy and creates predictable demand for the goods and services of the channel. The key assumptions behind this type of strategy is that the buyer can anticipate what consumers want and that the marketing program designed in conjunction with suppliers will be

¹It should be noted here that market uncertainty is quite different from market growth or decline. Market growth or decline, if predictable, need not be a problem. If changes in the market are predictable, manufacturers and retailers can adjust internally to reflect the changes in the market. However, the unexpected growth or decline of demand can lead to chaos for both manufacturer and retailer.

effective. While this may be reasonable in some situations, it is a tenuous assumption in the situation described earlier where consumers don't know or can't articulate what they want.

Alternatively, the buyer can take more of a reactive approach or strategy. If buyers cannot identify what consumers want in advance, they need to react to developing trends in a way that minimizes uncertainty of sales. With the help of suppliers, the buyer has to: (1) identify developing trends, and (2) develop programs that are flexible enough to respond to these trends. It is the early identification of trends and the development of flexible programs which allow the buyer to achieve predicted sales levels. In this sense, the buyer is not simply capitalizing on individual, sudden shocks in demand, but instead he is developing a program which allows him to determine the pattern and timing of demand.

In the next section of the paper, we will develop the hypotheses concerning the effect of different buyer/supplier relationships and the impact of the buyer's marketing program. Following this, we will discuss the methodology employed and the results obtained in the study.

Theoretical Background and Hypotheses Channel Relationships

Few organizations control all the resources needed to develop and implement marketing activities. Consequently, channel members depend on one another (Stern and El-Ansary 1977). The degree to which the buyer depends on the supplier is determined by the buyer's ability to substitute alternative sources of supply for the resources provided by the supplier (Emerson 1962). The more important the resources provided, the more difficult it may be for the buyer to replace the supplier.

Current literature suggests two perspectives regarding how buyers should organize their relationships with suppliers. One is that buyers should avoid depending on suppliers (Porter 1980). When the buyer depends on a supplier, the supplier can threaten to withhold important resources unless the buyer complies with his demand. This can create problems for the buyer if the supplier uses his influence to reduce his own uncertainty at the expense of the buyer. For example, if the supplier forces the buyer to absorb inventories that aren't selling well, it will make it difficult for the buyer to achieve predicted levels of sales.

In addition, depending on a supplier may limit the buyer's ability to develop reactive strategies. One way of identifying trends in the market is to experiment with a number of different styles and designs. When the buyer concentrates a large part of the department's resources on only a few suppliers, the variety of product portfolios the buyer offers the consumer may be limited. Furthermore, depending on a few suppliers may increase the difficulty of implementing the marketing program. When it is difficult to substitute suppliers and these suppliers cannot deliver products as needed, the buyer may fail to achieve anticipated levels of sales.

An alternative view is that buyers should maximize the supplier's dependence on the buyer (Pfeffer and Salancik 1978). When the supplier depends on the buyer, the buyer is able to influence the supplier. As a result the buyer can get the supplier to support his programs. When the buyer is able to develop proactive programs, he can use his influence over the supplier to

gain cooperation in developing and implementing his programs. In addition, the supplier is more likely to respond to the buyer's requests in a timely manner if the buyer is an important customer.

In order to test the above prescriptions, it is necessary to model the relative dependence between the buyer and supplier, that is, the degree to which the buyer depends on the supplier and vice versa. If, for simplicity, dependence is conceptualized as a dichotomy (high versus low), then the relative dependence between the buyer and supplier can be categorized as: (1) Asymmetric Dependence where the Buyer dominates the Supplier (ADBS), (2) Asymmetric Dependence where the Supplier dominates the Buyer (ADSB), (3) Symmetric High Dependence (SHD), or (4) Symmetric Low Dependence (SLD). In asymmetric relationships, the less dependent partner dominates the more dependent one. In symmetric relationships, both are equally dependent on one another, but the degree of dependence may vary from high to low. In ADBS, the buyer is less dependent on the supplier than the supplier is on the buyer. In this case, the buyer has the advantage of being able to substitute one supplier for another which gives the buyer greater flexibility in determining trends and implementing programs. In addition, since the supplier depends on the buyer, the buyer can influence the supplier to contribute resources as needed. Therefore, ADBS should be the most effective relationship for minimizing departmental uncertainty.

H1: As the presence of asymmetric, buyer dominated relationships increases relative to other types of buyer/supplier relationships, the lower the realized uncertainty of the department.

In ADSB, the buyer is more dependent on the supplier than the supplier is on the buyer. For the buyer, this has the disadvantage that the supplier can influence his use of resources. In addition, from the buyer's viewpoint, it is the most inflexible type of relationship.

H2: As the presence of asymmetric, supplier dominated relationships increases relative to other types of buyer/supplier relationships, the higher the realized uncertainty of the department.

There are advantages and disadvantages to both types of symmetric relationships. In symmetric high dependence relationships, the buyer and supplier cannot easily replace each other. This gives them the incentive to work together to develop and implement the marketing programs needed to reduce uncertainty. However, these relationships are inflexible in the sense that the buyer cannot easily substitute one supplier's products for another.

Symmetric low dependence relationships offer the buyer the ability to experiment with different product offerings. The variety provided by "sampling" from these suppliers allows the buyer to identify trends in consumer preferences. They also provide more flexibility in implementing these programs since the buyer can easily substitute the products of one for another. However, the buyer cannot demand special favors from these suppliers.

H3: The impact of shifting the department from symmetric high dependence relationships to

symmetric low dependence relationships should not change the level of realized uncertainty in departmental sales; the impact of symmetric relationships on realized uncertainty of sales should be intermediate between asymmetric relationships.

Marketing Program

Another means available to the buyer to increase predictability of sales is through the strategic use of advertising and markdowns. Most retailers rely heavily on newspaper advertising. In part, this is because newspapers serve the same local market as the retailer, so coverage is not wasted. But newspapers also communicate a sense of news and a degree of urgency about the purchase. Many retailers judge the effectiveness of Sunday's ads by the number of calls they get regarding the advertised merchandise on Monday morning. In this case, retail ads are used more for direct response than for long term objectives such as image building.

Similarly, markdowns are planned so as to stimulate demand. Consumers are assumed to be relatively price elastic. The purchase decision can be viewed as a tradeoff between price and the utility derived from immediate consumption. The consumer who wants to be perceived as a fashion leader is willing to pay full price at the beginning of the season in order to use the merchandise immediately. The consumer who is more interested in getting a bargain will wait until the item is marked down. Markdowns, implemented strategically to stimulate demand as needed, should increase the predictability of departmental sales. Financial support for advertising and markdowns is one of the points of negotiation between buyers and suppliers. Aggressive bargaining for dollars is encouraged by store management. The dollars available from suppliers and from store management are then allocated across months to capitalize on store events. The higher the budget for marketing programs, the more flexibility the buyer has to react to and to capitalize on trends as they develop.

H4: As marketing expenditures increase, the lower the realized uncertainty of departmental sales.

Methodology

Measures

Uncertainty: Uncertainty is defined as the degree to which future states of the market in which the buyer and supplier operate cannot be anticipated or accurately predicted (Pfeffer and Salancik 1978). *Departmental uncertainty* was estimated using two years of monthly sales data for each department. Using OLS, current sales levels were predicted from sales of the previous year. Uncertainty in departmental sales is then operationalized as $(1-R^2)$ (see Hannan and Freeman 1983), which represents the degree that current sales cannot be predicted from previous sales level. The assumptions behind this measure are that: (1) predictions based on monthly periods capture the planning horizon of the buyer, and (2) last year's sales levels are the best base of prediction for the current year's.

Departmental uncertainty is in part a function of environmental conditions, namely, the level of market uncertainty. *Market uncertainty* refers to uncertainty in

sales of the product line and was estimated in a manner similar to departmental uncertainty using information on total market sales. Information on both departmental sales and market sales was taken from a monthly report issued by an independent financial institution that collects and analyzes sales data from all of the major department stores in the metropolitan area. The correlation between departmental and market uncertainty is .6072.

Departmental Dependence Structure: Sixty-six buyers reported on the relative dependence between the store and over 2300 suppliers in their departments. Buyers characterized each supplier relationship by one of the following statement: (1) the retailer could more easily replace the manufacturer than the manufacturer could replace the retailer (ADBS), (2) the manufacturer could more easily replace the retailer than the retailer could replace the manufacturer (ADSB), (3) it is difficult for both the manufacturer and retailer to replace each other (SHD), or (4) it is easy for both to replace each other (SLD). The buyers' reports were validated for a sample of 119 supplier relationships by both store management and the suppliers themselves. Results of the validation study show that there was a high degree of convergence among informant reports (see Buchanan 1985).

A measure of departmental dependence structure was then calculated by summing the retail dollars attributable to each type of dependence relationship (ADBS, ADSB, SHD, SLD) across the department and dividing these sums by the total retail dollars for the department. This measure represents the percentage of the department sales attributed to the four relationships.

Marketing Program: The impact of the departmental marketing program is measured using advertising and markdowns as a percentage of sales. Information on advertising and markdowns are available from the annual Profit and Loss Statement for the department. The correlation between advertising/sales and markdown/sales is only .009.

Control Variables: The following variables were added to the model as control variables: (1) the buyer's tenure in the department, (2) the market share of the department, (3) the rate of growth for the product area, and (4) the different merchandising areas within the store (e.g. women's ready-to-wear, men's and children's ready-to-wear, and the home store). All of the measures were collected from secondary data sources except the buyer's tenure which was measured by self report.

In general, buyer tenure, market share, and market growth are expected to be negatively related to departmental uncertainty. As the buyer gains more experience in the product area, his ability to effectively manage the department increases. This should be reflected in lower departmental uncertainty. Similarly, as market share and market growth increase, uncertainty should decrease. As the department's competitive position in the market increases, the risk of competition absorbing the benefits of the buyer's marketing activities decreases. As market growth increases, most of the risk stemming from managerial mistakes and strategic weaknesses is absorbed by growing demand (Porter 1980). Buyers should therefore find it easier to achieve target sales under these conditions. The three product areas are grouped according to store divisions and are represented by two dummy variables in the regression model. No hypotheses regarding the direction of these coefficients was advanced.

Statistical Model and Hypothesis Testing

The model is estimated using OLS. The model is:

$$\text{DeptUnc} = \alpha + \beta_1 \text{MktUnc} - \beta_2 \text{ADBS} - \beta_3 \text{SHD} - \beta_4 \text{SLD} - \beta_5 \text{Ad/S} - \beta_6 \text{Md/S} - \beta_7 \text{BuyDept} - \beta_8 \text{MktSh} - \beta_9 \text{MktGr} + \beta_{10} \text{GMA1} + \beta_{11} \text{GMA2} + e \quad (1)$$

where:

- DeptUnc = Uncertainty of Department Demand
- MktUnc = Uncertainty of Market Demand
- ADBS = Percent of Sales Derived from Buyer Dominated Relationships;
- SHD = Percent of Sales Derived from Symmetric High Dependence Relationships;
- SLD = Percent of Sales Derived from Symmetric Low Dependence Relationships;
- Ad/S = Advertising to Sales Ratio for the Department
- Md/S = Markdown to Sales Ratio for the Department
- BuyDept = Time the Buyer Managed Department
- MktSh = Market Share
- MktGr = Market Growth
- GMA1 = 1 if General Merchandise Area = 1; 0 otherwise
- GMA2 = 1 if General Merchandise Area = 2; 0 otherwise

Since a linear relationship exists between the four categories of department structure, only three were represented in the equation. ADSB is taken as the base case. The estimated coefficients for ADBS, SHD, and SLD are interpreted as the difference between the base case and each relationship, respectively. To test the expected impact of different dependence relationships, the equation is expressed in terms of shifting the department from one type of relationship to another (e.g. to ADBS from SHD):

$$\begin{aligned} E(\Delta \text{DeptUnc}) &= [\beta_2 (\text{ADBS} + 1) + \beta_3 (\text{SHD} - 1)] - [\beta_2 \text{ADBS} + \beta_3 \text{SHD}] \\ &= [\beta_2 - \beta_3] \end{aligned}$$

The null hypothesis of equality between relationships is rejected if:

$$\beta_2 - \beta_3 = 0 \pm t_{(1-\alpha/2)} \sigma_{(\beta_2 - \beta_3)}$$

Results

The results are presented in Table 1. Overall, the model is significant at the .01 level. Among the control variables included in the model, market uncertainty, market share and market growth are all significantly related to departmental uncertainty. As expected, departmental uncertainty increased as market uncertainty increased; and departmental uncertainty decreased as market share and market growth increased. The coefficient for buyer experience was not significant.

**Table 1
Regression Estimates**

Variable	Parameter Estimate	Standard Error
Constant	.00751	.06637
Market Uncertainty	.98654 ¹	.12591
Dept Structure: ADBS ⁴	.25087 ¹	.07823
Dept Structure: SHD	.12451 ²	.06000
Dept Structure: SLD	.11832 ³	.07152
Advertising / Sales	-.43420	.74298
Mark Downs / Sales	.20446 ²	.10599
Buy Department	.00020	.00020
Market Share	-.20413 ³	.10847
Market Growth	-.11652 ³	.06392
General Merchandise Area 1	-.06425 ³	.03712
General Merchandise Area 2	-.05484	.03690
F = 10.55122 ¹		
R ² = .48146		
Adjusted R ² = .43583		
DF = 125		

¹ Significant (p < .01)

² Significant (p < .05)

³ Significant (p < .10)

⁴ To be interpreted as the difference between ADBS and the base case ADSB. The estimated coefficients for SHD and SLD should be interpreted in a similar manner.

The impact of advertising to sales ratio on departmental uncertainty is negative, as expected, but the relationship is not significant. A potential reason for this is the multicollinearity between the Ad/Sale variable and other variables included in the model. However, tests for multicollinearity indicated that this was not a problem.

The impact of markdowns to sales on departmental uncertainty is significant; however, the impact is positive. This is counter to the prediction that increasing markdown dollars would decrease departmental uncertainty.

To test the significance of the dependence structure of the department, a restricted model was run dropping ADBS, SHD, and SLD from the equation. The R² for the restricted model was .43728. A comparison of the full versus restricted model indicates that the dependence structure of the department contributes significantly to the model (F = 3.55003, df = 3, 125; p < .05). Table 2 reports the significance tests for the comparison of different dependence relationships.

Table 2 indicates that contrary to expectations, a shift in the departmental dependence structure to buyer dominated relationships from any other type of dependence relationship significantly increased the degree of department uncertainty. Furthermore, increasing the presence of supplier dominated relationships significantly decreased departmental uncertainty. Shifting the department between symmetric high dependence and symmetric low dependence relationships did not make a difference; and these relationships were intermediate of ADBS and ADSB in terms of their impact on departmental uncertainty.

TABLE 2
COMPARISON OF DIFFERENT DEPENDENCE
STRUCTURES

	Estimated Change	Standard Error
ADBS = ADSB ⁴	.25087 ¹	.07823
SHD = ADSB	.12451 ²	.06000
SLD = ADSB	.11832 ³	.07152
ADBS = SHD	.12636 ²	.05060
ADBS = SLD	.13255 ²	.06473
SHD = SLD	.00620	.04743

¹ Significant ($p < .01$)

² Significant ($p < .05$)

³ Significant ($p < .10$)

⁴ To be interpreted as the increase in departmental uncertainty resulting from a one percent change in the department structure to ADBS from ADSB.

Discussion

Buyer/Supplier Dependence Relationships

The results strongly support the view that buyer/supplier dependence relationships impact the level of uncertainty of departmental sales.

A comparison of the full versus restricted model indicates that department dependence structure is a significant predictor of environmental uncertainty. However, the impact of different buyer/supplier relationships is counter to the predictions of extant theories.

Buyer Dominated Relationships and Departmental Uncertainty (H1): The findings do not support the hypothesis that increasing the presence of buyer dominated relationships in the department increases predictability of sales. In fact, shifting the department to buyer dominated relationships from any other type of buyer/supplier relationship significantly increased the degree of realized uncertainty in departmental sales.

The hypothesized benefits of ADBS were based on the assumptions that: (1) buyers are willing and able to develop programs to reduce the uncertainty of departmental sales, and (2) by dominating the supplier, the buyer is better able to implement the programs which reduce uncertainty. However, there are situational factors which limit the effectiveness of buyer dominated relationships.

One of the factors which may affect the buyer's ability and willingness to minimize uncertainty is the store's internal promotion policy. Retail department stores rotate buyers through departments on an average of every two years. Since this is a relative short period to gain an understanding of the consumer market and competitive offerings, buyers may not be able to fully develop their expertise in the product area. This limits their ability to develop effective marketing programs. A second result of this policy is that it reduces the buyer's motivation to reduce uncertainty for the department. Buyers want to be promoted to a department with more responsibility and greater visibility within the store. Since the buyer's performance is evaluated, in part, on sales and profitability of their department, the buyer's incentive is to maximize short term gains rather than to create long term stability for the department. Problems created by uncertainty are left for some other buyer to resolve.

The second assumption regarding buyer dominated relationships is that they command the resources of their

suppliers and can force their suppliers to implement their programs. Again, this assumption may be tenuous given the nature of many of the suppliers in ADBS relationships. In general, these suppliers are more likely to be: (1) small operations which may not be financially stable, or (2) established companies that are having an "off" season, that is, their product offerings are not attractive to retailers. In either case, these suppliers tend to be less stable than companies in other types of relationships. Their instability has several implications. First, since survival is the foremost problem, they are more likely to focus on short term sales rather than long term stability. Second, given their instability, they may not be able to contribute to the buyer's programs even if the buyer demanded it. Third, these suppliers may fluctuate more in their ability to meet contractual agreements. And finally, the financial instability of the supplier organization may limit the number and types of products they offer. To the extent that these suppliers operate under greater constraints than other companies, they may not be able to offer as wide a range of products. Furthermore, the product offerings across these suppliers may be more homogeneous in nature because of the financial constraints common to all suppliers. If the number and variety of alternative product combinations are limited by supplier homogeneity and instability, the buyer is not able to experiment with different product combinations needed to detect trends in the marketplace.

Supplier Dominated Relationships and Departmental Uncertainty (H2): The findings do not support the hypothesis that increasing the presence of supplier dominated relationships makes departmental sales more unpredictable. In fact, as the presence of supplier dominated relationships increases relative to any other type of relationship, departmental uncertainty decreases.

The problems frequently associated with supplier dominated relationships are: (1) dominant suppliers force buyers to absorb the uncertainty, (2) from the buyer's viewpoint, dominant suppliers are uncooperative in developing marketing programs, and (3) these types of relationships are inflexible and therefore the buyer has less opportunity to identify and react to trends in demand.

While it may be true that dominant suppliers may be able to force the buyer to take product lines that are not selling well, it may also be the case that these suppliers simply have fewer high risk products. In contrast with many buyers, these suppliers have made their careers in the same industry. They know the competition, and they know the consumer. As a result, they have developed the expertise needed to develop products and marketing programs to reduce uncertainty. In addition, they may have a greater incentive to reduce uncertainty. They have a vested interest in growing, but in growing in a stable and predictable manner. Erratic growth disrupts the logistics of production and distribution. By anticipating trends in consumer demand, they can adjust their internal processes and external transactions to minimize the disruptive influence of unexpected turns in demand. The buyer can then indirectly benefit from the supplier's skills in reducing uncertainty.

It is also true that these suppliers, in general, are less willing to invest in marketing programs with buyers. However, they have often invested in their own marketing programs to develop demand for their brand. In many cases, consumers perceive their name to be

synonymous with the product category. Consequently, the buyer is able to take advantage of the relatively stable markets these suppliers have build for their products.

Finally, these suppliers may not offer buyers a great deal of flexibility in product offerings. But again, they have often preformed the function of experimentation internally. These companies often have a portfolio of products and are able to experiment with new products and marketing programs. By monitoring the trends for their products, they can react to changes in market demand, shedding designs that aren't doing well and supporting those that are.

Symmetric Relationships and Departmental Uncertainty (H3): As hypothesized, shifting the department from symmetric high dependence to symmetric low dependence relationships does not significantly impact the level of departmental uncertainty. Symmetric high dependence and symmetric low dependence relationships offer different, but equally effective, strategies for increasing the predictability of sales.

In comparison with ADSB, however, increasing the presence of symmetric relationships increases uncertainty. Perhaps this is because the suppliers in symmetric relationships are not as strong as dominant suppliers. They do not have enough resources to develop the marketing programs to build brand demand independent of the retailer. Consequently, they are not as successful as dominant suppliers in reducing departmental uncertainty.

In comparison with ADBS, increasing the presence of symmetric relationships decreases uncertainty. Again, the suppliers involved in symmetric relationships are potentially stronger than those in buyer dominated relationships. As a result, suppliers in symmetric low dependence relationships are more likely to provide a variety of products than those in buyer dominated relationships. And suppliers in symmetric high dependence relationships are more likely to be able to help implement the buyer's marketing program with their joint resources. Consequently, they are more successful than ADBS in reducing departmental uncertainty.

Marketing Program (H4)

As advertising expenditures increased, it was expected that the uncertainty of the department would decrease. A higher budget allows the buyer greater flexibility in trying to stimulate demand in order to maintain a predictable pattern of sales. The results indicate that as expenditures for advertising as a percent of sales increase, departmental uncertainty decreases; however, the relationship was not statistically significant. Assuming ads are used effectively to stimulate sales for selected items, the retailer could reach expected demand levels through the strategic placements of ads. However, advertising does not always have the direct or immediate impact that managers expect. Furthermore, advertising also serves other purposes in addition to stimulating demand in the short run.

The results indicate that as markdowns as a percent of sales increases, the uncertainty of the department increases significantly. This result runs counter to expectation. It was predicted that markdowns are used to stimulate sales in order to increase predictability of sales. One explanation for this is that consumers perceive a "continual" markdown policy, that

is, a policy where the price is first reduced by 10%, then 15%, etc., and they delay purchases as a result. Theoretically, such a policy should allow the retailer to take advantage of different price elasticities to maximize surplus and profit. However, prior expectations on the part of the consumer may invalidate this quasi-price-discrimination policy. If the consumer expects the markdown to increase over some indefinite period of time, they may continue to tradeoff immediate consumption for future discounts. Markdowns may not prompt sales during the desired period, but at a later period when the consumer perceives prices to have reached a final level.

The markdown policy may also affect the consumer's image of the store and the department in the long run. By emphasizing price, the retailer sacrifices the fashion and quality image. Furthermore, he may not be able to compete effectively on the basis of price with discount houses. Trying to be both fashion and price oriented may undermine the retailer's competitive strength and increase uncertainty in sales.

Summary

This study has attempted to determine the impact of marketing and channel relationships on the buyer's ability to minimize uncertainty for the department. Advertising and markdown dollars are not found to be used effectively in this situation to minimize uncertainty. Perhaps this is because buyers are not skillful in the strategic implementation of these programs. On the other hand, minimizing uncertainty is only one of several objectives of the organization. Advertising and markdown programs may be more important in achieving other objectives than in minimizing the uncertainty of departmental sales.

Channel relationships, on the other hand, play a key role in minimizing departmental uncertainty. An investigation of the different types of relationships yielded results which contradict extant theories. In particular, this study challenges traditional beliefs by demonstrating that dominating a relationship does not always offer advantages, and that being dominated isn't always threatening. This leads to the conclusion that channel relationships should not be evaluated solely on the basis of who dominates whom. Instead, the relationship should be evaluated on the basis of the exchange partner's ability to provide solutions to environmental problems facing the focal partner.

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The Cultural Content of Cognition and the Cognitive Content of Culture: Implications for Consumer Research¹

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Abstract

This paper introduces the cognitive anthropological perspective to consumer research. This perspective adopts a cultural approach to cognition, synthesizing both cognitive and cultural aspects of knowledge. Individuals' cognitive processes are examined within a specific sociocultural context and the content of culture is suggested to be a product of human learning. Moreover, because individuals have different motivations, abilities, and opportunities to learn cultural information, there may exist rich patterns of intracultural variation worthy of investigation. The theoretical, methodological, and substantive contributions of a cognitive anthropology perspective for consumer research are suggested.

Introduction

Consumer research has and continues to investigate the full range of issues associated with consumers' cognitions--the way individuals acquire, process, and use product information. In an effort to further enrich the discipline, there has been a movement to study consumer behavior as a function of the context in which it occurs (Belk 1975, Nicosia and Mayer 1976, Zaltman and Wallendorf 1977, Zaltman and Wallendorf 1983). More recently, this interest in context has concentrated on the effects of cultural factors on a wide range of consumer cognitions and behaviors (Desphande, Hoyer, and Donthu 1986, Hirschman 1981, Hirschman 1983, Sherry 1986, Tan and Farley 1987, Wallendorf and Reilly 1983).

A particular issue which transcends all of these streams of research concerns the knowledge and beliefs which are acquired, processed, and used in consumption contexts. Both the anthropology literature (e.g., D'Andrade 1981, Quinn and Holland 1986, Wolcott 1982) as well as that from consumer behavior (e.g., McCracken 1986, Mick 1986) posit that the knowledge held by individuals is often culturally influenced. Yet clearly the acquisition of knowledge can only occur at an individual level, making such processes innately cognitive. Hence, studying knowledge may best be facilitated when a "cultural approach to cognition" is used--that is, when individuals' cognitive processes are examined in a specific sociocultural context.

In this paper we will introduce a new perspective for consumer research which seeks to combine the rich illustrative view a cultural perspective provides while acknowledging the restrictions and generative capacity of individual cognitive systems. This view, more formally called a cognitive anthropological perspective, synthesizes both cognitive and cultural aspects of consumer behavior. We will first distinguish cognitive anthropological theory and methods from other ways of

looking at consumer behavior, and then illustrate how such a programme of inquiry will facilitate our understanding of the knowledge held and shared by individuals. Specific consumer research areas where a cognitive anthropology perspective can provide substantive insights will be discussed.

The Domain of Cognitive Anthropology

The foundation of cognitive anthropology is the notion that cultures are seen as systems of knowledge. According to Goodenough (1981), a society's culture represents "what one has to know, or profess to believe, in order to operate in a manner acceptable to its members in every role that they accept for any one of themselves" (p. 109). That the study of culture cannot be separated from individual mental processes is seen by Keesing (1981) as a central tenet of culture theory. In cognitive anthropology, the structure of cultural systems is created, shaped, and constrained by what individuals can think, imagine, and learn. Therefore, to understand cultures, one must be aware of both the content and structure of the knowledge which is learned by members of the community (Goodenough 1957).

Knowledge, or understanding, is related to experience, and not every member of a society has an equal opportunity to experience or learn all of the information possessed cumulatively by the group. Thus, different individuals will possess varying levels of "cultural expertise," causing intracultural variation with respect to information shared by the group (c.f., Boster 1986, Garro 1986, Peltó and Peltó 1975, Romney, Weller, and Batchelder 1986). As such, patterns of information agreement and disagreement can provide valuable insights into culture. Therefore, from a cognitive anthropology perspective, understanding culture can best be accomplished by looking at cultural knowledge as it is distributed within a societal system, taking into account the variation among individuals' and groups of individuals knowledge of and their vantage points on culture (Keesing 1987, p. 371).

Cognitive anthropology, then, studies communities in a natural setting which are comprised of the collection of individual cognitive processes. Inquiry seeks to discover and understand those elements of individual belief systems and world views which pervade a social group. Such studies are conducted by synthesizing the individual-level, context-free view of the human information processing system espoused by cognitive psychology with the context-steeped, group-level perspective of sociocultural systems espoused by cultural anthropology. The following sections more clearly delineate the theoretical and methodological positions inherent in cognitive anthropology by comparing this perspective to two other commonly evoked views of consumer research: the interpretive, symbolic view of cultural anthropology and cognitive psychology.

¹ The authors would like to acknowledge and thank Jim Boster, Larry Feick, Melanie Wallendorf and three anonymous reviewers for their comments on an earlier version of this paper.

Cognitive Anthropology and the Interpretive, Symbolic View of Cultural Anthropology

One theory of culture which has received attention in consumer research (c.f., Mick 1986, Sherry 1986) is the view espoused by the anthropologist Clifford Geertz. Geertz (1973, 1983) views culture as semiotic, with the key to cultural understanding being the development of "thick descriptions" constructed through the interpretation of behavior and artifacts which symbolize and characterize a community or society (Keesing 1981, p. 48-49). In this view, culture is interpreted to be the public symbols and public meaning shared by members of a community (e.g., the Balinese cockfight).

The cognitive view of culture can be compared to the interpretive view on four dimensions: conceptual strategy, research domain, locus of analysis, and methodological approaches. The conceptual strategy for both fields of anthropology is at the group level. As both are perspectives on how culture should be conceptualized and studied, they are oriented toward understanding how sociocultural systems develop and change (Keesing 1981). Thus, for example, both the cognitive and interpretive views of anthropology would be interested in developing an understanding of Balinese or any other culture.

The research domain of study is markedly different between the two. In the interpretive view, the research domain consists of the behaviors and artifacts experienced by people in a community. These things are viewed as public symbols constituting the cultural meaning system of the community. In cognitive anthropology, on the other hand, the key to understanding culture centers around the body of knowledge and beliefs possessed by people in a community. Such knowledge and beliefs are seen as the criteria used by individuals to attribute value to experiences, discern artifacts and attribute meaning to them, and decide how to accomplish their goals (Quinn and Holland 1986). Hence, while the interpretive view strives to understand Balinese culture by searching for the symbolic content of the Balinese cockfight (Geertz 1973), the cognitive anthropologist tries to understand the Aguaruna culture by searching for patterns of agreement among cultivators' classification systems of manioc vegetation varieties (Boster 1986).

The locus of analysis used to understand culture differs as well. In the interpretive view, the focus is on the symbolic nature of behaviors and artifacts, such as the cockfight, which are publicly displayed and held in consensus by the community.² In cognitive anthropology, the focus is on group members' knowledge and beliefs. This focus reflects a central tenet of cognitive anthropology which is that culture is actually constituted in the minds of individual members. This perspective is similar to the interpretive view in that it is concerned with culturally significant phenomenon. However, their point of departure is that cognitive anthropologists will seek to discover the structure and content of member's knowledge of the phenomenon,

²We acknowledge that Geertz uses individuals in his research as sources of cultural information. However, his goal is to understand the public meaning of culture that members share rather than seeking to understand the knowledge and beliefs held by individuals and the variations therein as does the cognitive anthropologist.

whereas the interpretivist investigates the phenomenon's symbolic content.

In addition to these substantive differences, there are methodological differences as well. In both fields, naturalistic inquiry (Lincoln and Guba 1985) is conducted, typically consisting of ethnographic fieldwork and depth interviews. Both perspectives use these techniques to familiarize themselves with the culture and to determine what aspects of the culture are particularly salient to the sociocultural system. The interpretive view then uses participant observation and key informant interviews to arrive at the shared symbolic content and meaning of the cultures' salient behaviors and artifacts. However, the cognitive anthropologist, by using field experiments (conducted on representative samples of community members) and structured data collection tasks which are analyzed through statistical tools, attempts to explain how such phenomena are represented in the minds of community members (c.f., Burton 1973, Romney, Weller, and Batchelder 1986)³. Researchers then use their ethnographic base to interpret these experimental findings. Hence, the cognitive anthropologist trades off a continuation of rich ethnographic fieldwork for experimental research in their pursuit of cultural understanding.

Cognitive Anthropology and Cognitive Psychology

Since the field of cognitive psychology has played a major role in the development of the field of consumer behavior, a review of its basic tenets is not germane here (the interested reader is referred to Bettman 1979, Engel, Blackwell, and Miniard 1986). However, it is meaningful to contrast cognitive anthropology with cognitive psychology along the same four dimensions used above.

In cognitive psychology, the conceptual strategy and research domain are concerned with uncovering the mechanics of individual processing systems which are generalizable to all individuals, e.g., knowledge structures, attitude and belief formation, information processing (c.f., McGuire 1976, Hansen 1976). In cognitive anthropology, the conceptual strategy is oriented toward the group rather than the individual, and yet, like cognitive psychology, it is concerned with knowledge structures and attitude and belief formation. Thus, when studying a topic such as categorization, the cognitive psychology orientation focuses on a set of individuals and attempts to generalize to a greater population. On the other hand, the cognitive anthropology perspective would be oriented toward understanding the cognitions of individual group

³Here the phrase "structured data collection tasks" is used to refer to the respondent being asked to perform a set of procedures, e.g., a sorting or identification task. Such procedures typically yield quantitative data which is used to assess individuals' knowledge content and structure. The interpretive view, in its adherence to a naturalistic mode of inquiry, may be equally structured; however, data are usually collected in the form of observations and thus are typically qualitative in nature. Certainly, ethnography may involve the use of quantitative data, although traditionally this has not been the case.

members and using the information as a means of interpreting the sociocultural system.⁴

Both cognitive anthropology and cognitive psychology share the same locus of analysis--the content and structure of individual cognitive systems. However, there are two very important differences between cognitive anthropology and cognitive psychology along this dimension. First, they differ in the kinds of questions they pose regarding the manner in which cultural information is processed. As D'Andrade (1981) notes:

the cognitive psychologist wants to know how the machinery of the brain works on all types of information, including cultural information, while the cultural anthropologist wants to know how cultural information is constrained and shaped by the way the brain processes information (p. 182)

and, we might add, by the individual's unique perspective on the information.

The second important difference concerning the individual locus of analysis is that cognitive anthropology aggregates individual differences by the culture or subculture being studied.⁵

Cognitive psychologists, on the other hand, take individual-level responses and aggregate them without concern for the cultural content of the responses. Similarly, consumer researchers often take individual-level responses and aggregate them according to demographic or geographic dimensions again without concern for cultural content (e.g., Tan and Farley 1987, Tan and McCullough 1985). Interestingly, when cultural knowledge and beliefs are not segregated to a particular location, patterns may be identified in groups not traditionally associated with their presence (e.g., Ellis et al. 1985, for a discussion of Chineseness in the Southwestern United States). As such, it seems clear that our traditional concern with demographic, psychographic, and geographic indicators of consumer cognitions and behaviors could be complemented with an understanding of consumers' cultural meaning systems (i.e., by studying groups that are aggregated and segmented according to learned knowledge, beliefs, and world views in addition to variables such as age, income, lifestyles, and areas of habitation).

Finally, the methodological approaches are notably different. In cognitive psychology, most descriptive work is experimental in nature. In cognitive anthropology, field experiments have been used, although structured data collection tasks (See note 3) are more frequently conducted. In addition, ethnographic or naturalistic inquiry is performed infrequently in cognitive psychology, whereas in cognitive anthropology, such accounts are typically utilized as described previously. A

⁴Although the cognitive psychologist may focus on particular populations in their research (e.g., children, housewives), they do not tend to do so from a sociocultural perspective as does the anthropologist.

⁵A subculture is defined by Jorgenson (1979) as any group of people who, while sharing some traits in common with the surrounding culture (e.g., language), may be differentiated from it by their beliefs, symbols, and/or material artifacts.

summary of the ways in which cognitive anthropology contrasts with the interpretive view and cognitive psychology appears in Exhibit 1.

Summary

The paradigm of cognitive anthropology outlined above represents a rich alternative to entirely individual or solely group level understandings of consumer behavior. In fact, it seems to accent positive features of the other approaches while eliminating some of their key limitations. Cognitive anthropology values individual cognitions and attempts to capture their structures and content using many of the highly replicable and empirical techniques employed in cognitive psychology. Cognitive anthropology complements and grounds this work by investigating the cultural context of cognitions and by relying on the more subjective and highly interpretive fieldwork techniques from cultural anthropology. However, eliminated is the tendency of cognitive psychology to use samples that are not easily aggregated with respect to shared knowledge and beliefs and the interpretive view's reliance on key informants to understand the cultural system which fails to uncover the rich variation in members' knowledge and beliefs which may constitute the culture. As a result, this paradigm can be seen as providing both highly reliable and highly valid insights.

In addition, the cognitive anthropology paradigm allows a dialectical process of inquiry to unfold, as the researcher can move the analysis freely between the group and the individual. Rowan and Reason (1981) argue that individuals understand and make sense of their world by acting, reflecting on, and interpreting both the present and the past, and the self and its place within a culture. So can the researcher move in a hermeneutic circle to capture the cultural reality derived from the meanings associated with the individuals as a part of the sociocultural system and the sociocultural system comprised of individual meanings. Exhibit 2 illustrates how an ongoing understanding and interpretation of the cultural reality can be achieved as one moves dialectically between the individual and sociocultural system.

This view of culture is consistent with Sherry's (1986) position that culture is both constituted and constituting. It is constituted or composed of a body of meaning that assists group members in their derivation of what is, what can be, how they feel about it, what they can do about it, and how they should go about doing whatever they have decided to do (Goodenough 1963, p. 258-9). It is constituting because it is being ever created and changed by an influx of individuality, the cross-fertilization of cultural meaning systems, and the injection of technology, marketing, and other agents of social change (c.f., Hirschman 1986, Moorman 1987).

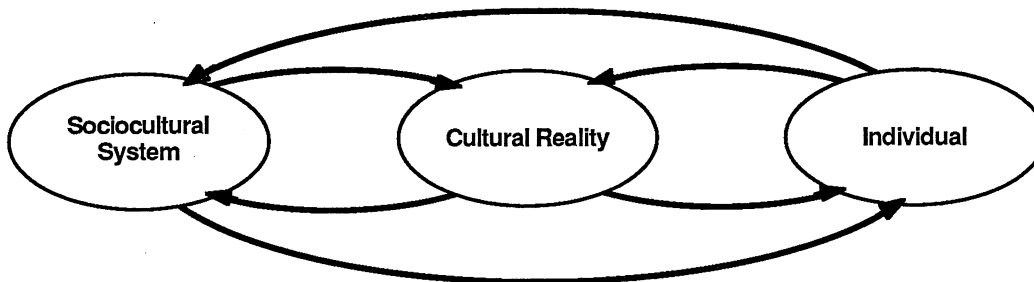
The Cultural Content of Knowledge and Intracultural Variation

We have shown that cultures have a unique system for perceiving and organizing material phenomena--things, events, behavior, and emotions (Goodenough 1957) and that the object of cognitive anthropology is not these material phenomena, but the way they are organized in the minds of people. . . cognitive organizations of material phenomena (Tyler 1969, p. 3). Thus, culture can be viewed as an information pool which emerges when individuals in a community attempt to make sense of the world and each other (Boster 1986,

EXHIBIT 1

	Conceptual Strategy	Research Domain	Locus of Analysis	Methodological Approach
COGNITIVE ANTHROPOLOGY	Socio-Cultural Systems	Knowledge & Beliefs	Cognitive Aspects of Culture	Ethnography, Interviews, Structured Data Collection Tasks and Statistical Analyses
INTERPRETIVE VIEW	Socio-Cultural Systems	Behaviors & Artifacts	Symbolic Content of Culture	Ethnography, Interviews, Observations and Data Analyses
COGNITIVE PSYCHOLOGY	Cognitive Structures & Processes	Knowledge & Beliefs	Cognitive Aspects of Individuals	Experimental Designs Structured Data Collection Tasks and Statistical Analyses

EXHIBIT 2



D'Andrade 1981). In addition, the knowledge contained in the information pool must be *intersubjectively shared* by all members of the sociocultural system (D'Andrade 1987). Intersubjective sharing makes certain facts of the world seem obvious (e.g., a pitch thrown over the catcher's head is a ball) and limits the amount of information that must be made explicit (i.e., the fourth "ball" thrown to the batter when the bases are loaded implies, without need for explication, that a run has scored). Thus, community members are able to convey, often implicitly, information that is rich with intersubjective (culturally shared) meanings (Roth 1987, Taylor 1971).

These meaning systems are explicitly and implicitly transmitted to new cultural members so they too can participate in the world view (Spindler 1973, Schwartz 1981). In the transmission, intersubjective meanings are shaped by individual circumstances, histories, and interpretations (Kessing 1987). For example, in Western culture we conceive of price as the value a seller requests for exchanging ownership of a product. We may also intersubjectively share the belief that a certain good is priced highly. However, the interpretation of a price level might include very different individual, subjective realities, e.g., high price-high quality, high price-rip off, high price-high status. As a result, the *content of culture is also a product of human learning--the ways in which people organize their experiences*. This is an interesting twist to our typical understanding of culture and knowledge structures in

consumer research. Generally, we neglect to inspect the cultural content of knowledge and assume away its presence in our analysis. Moreover, we also fail to investigate the fact that the content of culture is also a product of learning. In a cognitive anthropology perspective, individual motivations, abilities, and opportunities to learn affect the knowledge members acquire which in turn shapes the content of culture. A failure to appreciate these considerations results in a very homogeneous view of culture--one that fails to account for intracultural variation and its important contribution to understanding the evolution and adaptation of cultural meaning systems. The remainder of this section discusses intracultural variation and the rich repercussions it has for the methods we adopt and the questions we ask in consumer research.

Others have argued that the analysis of culture from a cognitive perspective should deal with the issue of intracultural variation (Dougherty and Keller 1982, Furbee and Benfer 1983, Garro 1986, Matthews 1983, Pelto and Pelto 1975, Sankoff 1971). Pelto and Pelto (1975) call for a more heterogeneous view of culture, warning anthropologists and other social scientists about the dangers of generalizing from single informants and of aggregating members of a culture without comparing the extent to which intracultural and situational variation are expressed in their classificatory systems. In consumer research, we generally fall victim to the latter pitfall.

In this paper, we are interested in the *organization* of intracultural diversity. By this we mean the extent to which cognitive maps are shared, which aspects of them are not shared, and how this varies from individual to individual (Sankoff 1971). We are interested in the organization of intracultural variation for a variety of important reasons. One key reason is that we feel consumer researchers may lose an abundance of crucial information about cultural occurrences such as influence, sharing, and transmission by failing to compare individual cognitive maps of cultural phenomena. In other words, one result of this perspective is that it can contribute to our understanding of the acquisition and transmission of culture as an individual process (Matthews 1983). Failure to account for individual differences has led us to ignore the fact that there may be *patterning in individual variation* and that such patterning may ultimately provide us with important information about just which aspects of cultural systems are shared and how such sharing occurs (Hays 1976).

Many studies have, in fact, found patterns to variations in cultural knowledge. For example, Boster (1986) assessed differences among individual Aguaruna informants in terms of their knowledge of manioc plants, i.e., their ability to identify different species. He found that *although there is a single model of identification, there are deviations from this model* according to the sexual division of labor, membership in kin and residual groups, and individual expertise. Likewise, Garro (1986) found that Tarascan curers and noncurers did not differ in their abilities to evaluate symptoms as indicators of illnesses; however curers did share a specific body of knowledge learned through experience in treating disease not shared by noncurers. These variations in cultural knowledge may be of theoretical interest because similarities and differences in belief systems of cultivators and hunters, physicians and their patients, and marketers and their customers are likely to affect how manioc, medical treatments, and products are perceived and utilized.

In consumer research, we may investigate the extent to which consumer cognitions or behavior vary within a population or culture, however we often fail a cognitive anthropological investigation of intracultural variation in two important respects. First, we rarely investigate truly "cultural phenomena." Boster (1985) states that "in studying variation, it is essential to investigate what is important to the informant, not just what is important to the (researcher)" (p. 179). Recently, consumer researchers have tried to investigate activities and things important to consumers (Belk 1987, Wallendorf and Arnould 1988). Csikszentmihalyi and Rochberg-Halton's (1978) work investigating the meaning of household objects is another good example of this orientation. Second, when looking at cultural aspects of consumer behavior, we generally collect information about preferences, attitudes, or consumption behaviors (e.g., Tan and Farley 1987, Wallendorf and Reilly 1983) but have not been interested in how cultural phenomena are classified depending on individual factors or consumption contexts and their patterns within the culture. Clearly, all of these aspects of consumer research (i.e., attitudes, beliefs, behaviors, and knowledge classification systems) are relevant to our understanding of culture's impact on consumption.

Understanding and explaining the patterns in cognitive views of cultural phenomena is a very important activity—one that could benefit consumer

researchers. This richness may help researchers conceive of a variety of conceptualizations that consumers hold of material phenomena, understand how these conceptions are shared or patterned in cultures, and discover why members of a culture appear to respond to marketplace phenomena differently. One particular application of the cognitive anthropological research on variations in medical knowledge could be in the area of planned change when opinion leaders may be targeted as the disseminators of an innovation. If opinion leaders hold conceptions of the innovation that are incompatible with the remainder of the culture, their influence may be limited. In a recent study, Gilly and Zeithaml (1985) failed to consider individual cognitive variations in elderly views of technologies, acknowledging only that compared to the non-elderly, the elderly were in almost all cases slower to adopt new technologies. A cognitive anthropological view of intracultural variations may have suggested a richer view of the adoption process. We feel it is fair to suggest that by understanding how such patterns of intracultural variation arise, we can better understand both the culture's meaning systems and the flow of material goods through the culture (Sherry 1986, McCracken 1986).

Another reason to look at intracultural variation is to use knowledge of the causes of variations in a predictive sense to guide the development of testable hypotheses or to manage the consumption patterns within a culture. For example, members of a bicycle club may vary in their beliefs about the value of after-market components depending on the types of riding they do. If we discover that competitive racers think Italian tires perform best in racing conditions, we could use this information to test a specific prediction about the way tires are perceived by other racers. In such a manner, informant characteristics (i.e., type of riding) can be used to test a specific prediction about the way knowledge is distributed. Moreover, understanding patterns of intracultural variation also facilitates the management of cultural phenomena. For example, the introduction of a new health care delivery system to a rural, non-western culture would be facilitated by an understanding of how health care givers and receivers perceive themselves, each other, and the content of their transaction. Understanding these perceptions will enable the innovation to be introduced and managed in such a way as to minimize the occurrence of cultural conflicts within the system.

Some studies have shown that cognitive classifications also tend to vary with the context or the task at hand. Matthews (1983) found that Oaxaca food classifications varied by the objective at hand, e.g., reinstating sex drives, balancing a meal. These and other findings (e.g., Dougherty and Keller 1982) have important consumer research implications. Although it has been suggested that consumer researchers need to pay attention to the situational characteristics in which consumer behavior occurs, it has not been suggested that researchers look at how cognitive classifications tend to vary with the context. An important finding from Matthews (1983) is that context affected both the classifications of objects, in this case foods, as well as the particular defining attributes utilized to make such classifications. For example, the manner in which a man classifies automobiles may vary with the type of cultural criteria he evokes. When thinking about purchasing a new car, the defining attributes used when his wife is present may be economy, roominess, and storage

capacity; however, when with rugby team members, sportiness, high performance, and color may become the defining attributes. By capturing this variation, we can better understand why and under what conditions people make consumption decisions. To suggest that determinant attributes vary by context is an interesting question for future research.

Obviously not all cultural phenomena have revealing patterns. However, by overlooking this particular source of information, we may be missing out on insights into why groups function as they do, why they maintain certain meaning systems, and why they divest themselves of other meaning systems. Pelto and Pelto (1975) argue that we should begin with the assumption of cultural heterogeneity, attempt to get these fundamental micro-processes under theoretical control, and then move to group assertions. For example, Saegert, Hoover, and Hilger (1985) make sweeping generalizations about Mexican American consumers' brand loyalty, patronage at familiar stores, and price consciousness without considering either within cultural variation or the cognitive maps members hold of cultural phenomena. Accounting for intracultural variation (e.g., empirically observing strong and weak Hispanic identifiers) appears to solve many questions we have about the meaning systems of various cultures (Deshpande, Hoyer and Donthu 1986).

Other Implications for Consumer Research

The cognitive anthropological view is attractive to a variety of consumer research domains. One particularly interesting area of application for a cognitive anthropological perspective is in the study of interpersonal influences. Past studies have attempted to determine the extent to which different types of reference group influences affect product and brand choices (Park and Lessig 1977) and privately and publicly consumed products (Bearden and Etzel 1982). This perspective has been enriched recently by the application of social network analysis which suggests that interpersonal relations vary depending on the structure and content of the relation (Reingen et al. 1984). Cognitive anthropology could supplement our understanding of groups or networks in an important way.

If, for example, we wanted to investigate patterns of influence within a college fraternity, it would be necessary to focus on product categories which are particularly salient for group membership (e.g., music, beer, sports, and other recreation activities).⁶ A cognitive anthropology perspective would insist that researchers collect data about the individual fraternity members cognitions of these cultural phenomena. Specifically, they could ask members what music means to them and have them categorize, for example, different types of music, performers, and radio stations. Moreover, members might also be asked to make attributions about other members' tastes and preferences regarding these phenomena. These data would then be analyzed and mapped to reflect individuals' knowledge

and beliefs about the cultural phenomena and how they perceive one another's knowledge and beliefs about these phenomena. This information would identify patterns of convergence and variations in shared knowledge. Used in conjunction with data on the sources, processes, and settings of information exchange, these patterns should reveal whether members that share similar conceptions of music influence one another, the extent to which dissimilar members influence one another, and why certain patterns of influence evolve or fail to evolve in the fraternity.

A cognitive anthropological view may also shed some light on patterns of informal marketing communications (e.g., word of mouth) within a culture. By understanding individual differences in amounts and types cultural knowledge, consumer research may be able to better understand the evolution of patterns of communications. Recently, Feick and Price (1987) identified market mavens as consumers who have and are willing to share information about many kinds of products, places to shop, and other facets of the market with others and suggested that market mavens may be a unique source of referrals and influence for other consumers. However, from a cognitive anthropology perspective, this analysis is incomplete. To truly understand the presence of market mavens, we must investigate the effect they have on other people's behavior, e.g., use of maven-provided information, search for additional information, and the development of purchase criteria or determinants. By focusing on the sociocultural system and understanding the cognitive maps members have of the maven as a cultural resource of market information, researchers may develop insights into maven effectiveness, i.e., when and in what ways maven resources are used. A cognitive anthropology perspective enables consumer researchers to analyze patterns of convergence and variation in product information seeking, sharing, and utilization which pervade the group.

A cognitive anthropological perspective may also have implications for the way we formulate and model consumer acquisition, encoding and categorization processes. Cohen and Basu (1987) have recently advanced a contingent processing formulation which acknowledges that the categorization of products can be shaped by specific learning histories of individuals and the contextual influences of both choice and consumption environments (p. 462). In other words, where, how, and under what conditions consumers learn about products and in what contexts they will evaluate, choose, and use the products are keys to understanding how such products are categorized in the mind. By acknowledging the automaticity with which cultural models and meanings are invoked by consumers and yet recognizing the individual-level interpretations and histories we bring to the process, a cognitive anthropological framework complements the advances inherent in the contingency processing framework.

Conclusion

The field of cognitive anthropology was explored as a means of increasing our understanding of current issues in consumer research. Cognitive anthropology was shown to possess a rich body of literature and to differ significantly from the symbolic, interpretive view of culture as well as from cognitive psychology. By studying communities in a natural setting using the analysis of individuals' knowledge and beliefs, a unique

⁶ Focusing on product categories which are salient for group membership is consistent with Reingen et al.'s (1984) findings that brand congruence and referent influence are not necessarily associated with product conspicuousness (i.e., products that appear to be important to the group because they are publicly displayed)

perspective which merges both culture and cognition has been shown to offer new insights relevant to the study of consumer behavior. One particularly interesting insight involved identifying and explaining intracultural and situational variation expressed in classificatory systems of a sociocultural systems' members. This perspective was also shown to offer theoretical and methodological insights into such topics as reference groups and other forms of interpersonal influence, diffusion of knowledge and innovations and more generally, the management of culture, and explains the failure of past cultural studies to generate a clear picture of the effects of culture on marketplace activities.

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Do Geographic Subcultures Vary Culturally?¹

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INTRODUCTION

One continuing debate characterizing the study of consumer behavior revolves around the notion of regional differences in consumption patterns. Perhaps the strongest argument supporting the regional variation concept is offered by Hawkins, Roupe, and Coney (1980), who hypothesized that geographic subcultures can be an important determinant of both consumption and nonconsumption behaviors. They proposed a model of the geographic subculture influence on consumption (shown in Figure 1) and have reported the results of a study designed to investigate regional variation in the preparation and consumption of coffee. The findings of the research suggest that while the percentage of respondents drinking coffee in various regions (East, Midwest, South, and West) is fairly similar (varying from 63 percent in the East to 55 percent in the West), there are radical differences in how coffee is prepared and consumed. For example, the majority (54%) of the respondents in the East used sweeteners and creaming agents in their coffee while few (24%) of their Western counterparts did likewise. Regional variations were also identified with respect to the use of electric vs. nonelectric percolators in the preparation of coffee, the preference of cups vs. mugs from which to drink the beverage, and the relative preferences for drinking their coffee black. Hawkins, Roupe and Coney (1980) conclude that, while the geographic subcultures are changing over time, the regions do not appear to be losing their distinctive flavor.

Other support for a regional analysis of consumption patterns has been found. Cleaver (1982) found regional differences in grocery purchasing. Dardis et al. (1981) reported significant differences in recreational expenditures by geographical area. Wells and Reynolds (1979) reported significant regional differences in life styles. For example, they supported the common stereotypes of the South being more traditional, the West as being relatively liberal, and the East as being cosmopolitan and innovative.

Perhaps the strongest call for marketers to consider geographic subcultures was Garreau's (1981) book, *The Nine Nations of North America*. The vivid descriptions of various areas of the United States helped stimulate efforts by firms such as Management Horizon and Ogilvy and Mather (Whalen 1983b, 1983c; Marketing News 1984) to promote geographic segmentation. Apparently, this promotion has been successful as firms such as Campbell's Soup (Business Week 1986) are developing regional advertising approaches for products which have been typically promoted using a single national campaign.

The basis for the subdivision of the United States has been investigated empirically, and Garreau's (1981) model has not been supported (Gentry 1986; Kahle 1986). Further, Lesser and Hughes (1986) have found that segmentation bases are generalizable across various geographical regions in the United States.

The primary questions to be investigated in this study are whether geographic subcultures differ in their consumption patterns (more specifically, in their willingness to try new products and the level of risk associated with different products) and if the regions also differ in terms of their underlying cultural beliefs.

EXPLANATIONS FOR GEOGRAPHICAL SUBCULTURAL DIFFERENCES

Thirty years ago strong demographic differences existed across different regions of the United States. While differences still exist, the general pattern is toward homogenization. For example, while the South and Southwest regions of the United States have traditionally been younger, poorer, and less educated, both areas are "aging" and increasing in income and education levels at a more rapid rate than the rest of the country (Gentry and Grove 1981). Exceptions to this general homogenization trend relate to the distribution of Hispanics throughout the U.S., religious variation, and (probably related to religious variation) household size.

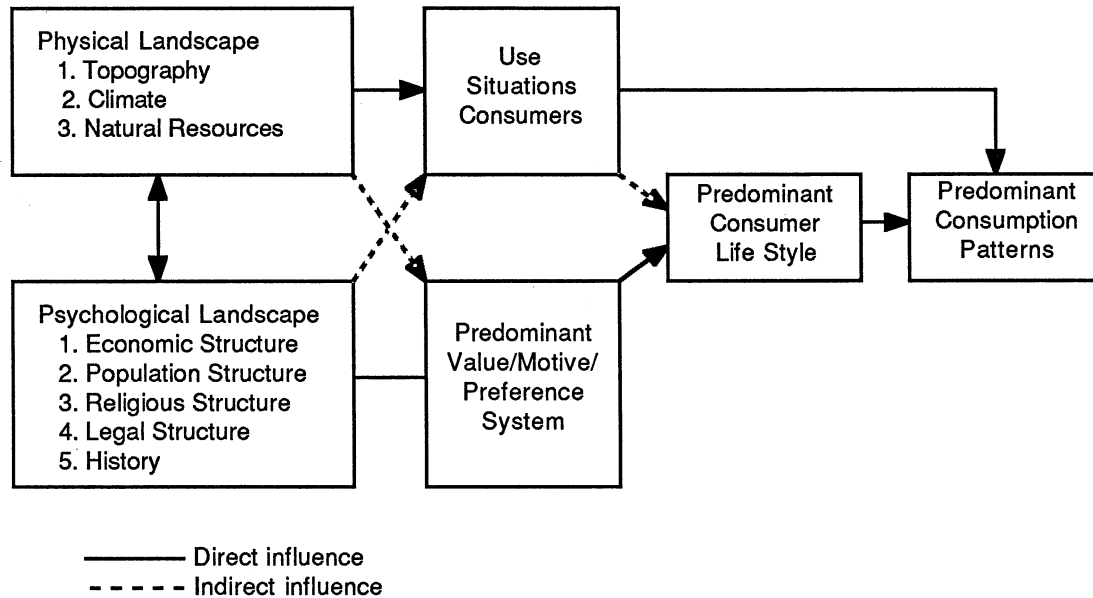
It would appear that regional differences in consumption, to the extent that they exist and to the extent that they are due to income differences, will gradually disappear unless they are due to other causes. Garreau (1981) based his determination of the boundaries of his nine nations on anecdotal evidence, stating that he was uncertain as to the exact criteria used in the development of his maps. According to his speech to the AMA's Third Research Conference (as reported in Whalen 1983a), he was later able to specify better the type of criteria used in developing his model: economic, social, cultural, political, topographic, and natural resources. These criteria relate closely to the physical landscape and psychological landscape criteria incorporated in the Hawkins, Roupe and Coney (1980) model.

More recently, Kahle (1986) pointed out that the basis for geographic segmentation is, in part, the assumption that there are geographic differences in values. He investigated differences in values such as self-respect, self-fulfillment, security, fun and enjoyment, warm relationships, sense of accomplishment, and sense of belonging. Regional differences in values were found, though Garreau's breakdown of areas was not found to coincide with many of the differences.

We will look at other cultural variables and see if geographic differences exist. Specifically, we will investigate the individual's fate orientation, his or her religious commitment, and the ties to their traditional cultural values. Fatalism or fate-orientation may be defined as the belief that all events are predetermined by fate and therefore unalterable by man. The concept is

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FIGURE 1
MODEL OF GEOGRAPHIC SUBCULTURE INFLUENCE ON CONSUMPTION



Source: Hawkins, Roupe, and Coney (1980).

similar to Henry's (1976) value orientation with respect to man's relation to nature, classified as subjugated by, in harmony with, or mastery over nature. People with a relatively high degree of fatalism would be similar to those who believe that man must simply take events as they come, instead of being able to plan, avoid, or master the environment. Varying levels of fate orientation would seem to be explained in large part by differences in religious background. Hirschman (1983b) cites literature indicating that Catholics are relatively fatalistic (Callahan 1963; Gleason 1969), that Protestants are lower in fatalism (Anderson 1970; Greeley 1977), and that Jews are high in terms of internal locus of control (Patai 1977). [Locus of control scales have been used frequently to measure "fatalism" (Aldrich, Lipman, and Goldman 1975; Surlin 1976).] Hoover, Green, and Saegert (1978) proposed that fatalism may explain cross-cultural differences found in levels of perceived risk.

Just as fate orientation may vary across the United States due to the distribution of various religious groups, the level of religious commitment may also vary. Recent studies by Hirschman (1981a, 1981b, 1982a, 1982b, 1982c, 1982d, 1983a, 1983b; 1985) have found religious beliefs to play an important role in the formation of the consumer's values, attitudes and behavior.

In addition, we considered one's adherence to traditional cultural values. Such adherence can be expected to relate directly with perceived risk associated with new products and inversely with their willingness to try those products.

RESEARCH OBJECTIVES

The study will investigate:

1. whether differences exist in cultural values (fate orientation, religious

commitment, and adherence to culture) across geographical regions;

2. whether differences exist in related consumer behavior variables (perceived risk and willingness to try new products); and
3. whether differences in cultural values help explain differences in the consumer uncertainty variables.

Specifically, to the extent that differences in cultural values exist, we hypothesize that those areas higher in fate orientation, in religiosity, and in adherence to cultural values will show higher levels of perceived risk associated with new products and less willingness to try those products.

METHODOLOGY

A questionnaire was distributed to college students in four areas: West (Washington), North Central (Wisconsin), Southwest (Oklahoma), and Northeast (Massachusetts). The respective sample sizes were 67, 98, 189, and 135. The convenience sample of college students was intended to make the overall sample relative homogeneous in terms of socio-economic characteristics.

INDEPENDENT VARIABLES

Fate Orientation. While many studies have used Rotter's (1977) Locus of Control instrument to measure the fatalism construct (Aldrich, Lipman, and Goldman 1975; Surlin 1976), some researchers (Aldrich, Lipman, and Goldman 1975; Chamberlain 1976; Farris and Glenn 1976) developed their own measures. We used three measures: a four-item fatalism scale developed by Farris and Glenn (1976), a six-item Locus of Control scale that Lumpkin (1985) reduced from Rotter's (1966) 29-item scale, and a two-item product-specific scale which we developed. The scales are shown in Figure 2.

FIGURE 2
FATALISM, LOCUS OF CONTROL, AND RELIGIOUS COMMITMENT MEASURES*

Farris and Glenn (1976) Fatalism Measure

Making plans only brings unhappiness because plans are hard to fulfill.
It doesn't make much difference if people elect one or another candidate, for nothing will change.
With things as they are today, an intelligent person ought to think about the present, without worrying about what is going to happen tomorrow.
The secret of happiness is not expecting too much out of life and being content with what comes your way.

Lumpkin (1985) Locus of Control Scale

When I make plans, I am almost certain that I can make them work.
Getting people to do the right things depends upon ability; luck has nothing to do with it.
Many of the unhappy things in people's lives are partly due to bad luck.
Getting a good job depends mainly on being in the right place at the right time.
What happens to me is my own doing.
Many times I feel that I have little influence over the things that happen to me.

New Product Specific Fatalism Items

When I am dissatisfied with the performance of a new product, I blame the company that made it.
When I am dissatisfied with the performance of a new product, it is often due to my having unreasonably high expectations.

Putney and Middleton (1961) Religious Commitment Index

My ideas about religion are one of the most important parts of my philosophy of life.
I find that my ideas on religion have a considerable influence on my views in other areas.
Believing as I do about religion is very important to being the kind of person I want to be.
I very often think about matters relating to religion.

New Measure of the Role Religion Played in One's Upbringing

My religious upbringing played an important role in forming my values.

*All items used a five-point scale ranging from "Strongly Agree" to "Strongly Disagree."

Religious Commitment. The respondents were also asked a series of questions as to the role that religion had played in their lives. Hirschman (1981a) measured commitment using a five-point "Very Strong" to "Very Weak" scale. We used the four-item scale developed by Putney and Middleton (1961) to measure the current influence of their religion on their lives. In addition, we added one item which deals with the role that religion had in their upbringing.

Cultural Adherence. We created a five-item scale to determine the respondents' adherence to his/her culture (like to conform to traditional value; culture is worth preserving; young people should adopt new values; want loved ones to behave consistently with tradition; people should not mix other cultural values with their own).

DEPENDENT VARIABLES

Novelty Seeking. We used the approach taken by Hirschman (1983a), in which she asked respondents how willing they are to try something new. The responses were recorded on a four-point scale anchored by "Very Willing" and "Not at All Willing." We used most of the 15 consumption areas which she used: dance styles, places to shop, fashion clothes, books, magazines, food, restaurants, and hair styles. Due to confusion found earlier in a cross-cultural study using a similar instrument (John, Tansuhaj, Manzer, and Gentry 1986), we dropped home furnishings, movies, political ideas, religious ideas, transportation, and sports. Several respondents gave written and oral feedback that those stimuli elicited a variety of images. Also, the variance in the ratings of those stimuli was greater. In their

place, we added toothpaste, cameras, watches, motorcycles, and computers.

Perceived Risk. We used a perceived risk measure similar to the one used by Hoover, Green, and Saegert (1978). This measure asked how much risk (a great deal, some, little, no) is associated with the use of a product. The risk questions were asked for the same products listed above.

RESULTS

The analysis took three stages: (1) an investigation of the measures themselves; (2) an investigation of regional differences in the perception of uncertainty in the marketplace and in fate-orientation, religious commitment, and cultural adherence; and (3) an investigation of the relationship between the cultural values and uncertainty in the marketplace.

INVESTIGATION OF THE MEASURES

At points it will be more efficient to use unidimensional rather than multidimensional measures in the analysis. Consequently, Cronbach alphas were calculated for the following constructs: Willingness to buy (across the 13 products) .71; risk associated with the products (across the products) .78; Farris and Glenn's (1976) four-item fatalism scale .56; the six-item Lumpkin (1985) locus of control measure .12; the five-item religious commitment measure .92, and the five-item cultural adherence measure .36. The bias toward larger scales is evident in these reliabilities. The cultural adherence measure shows only marginal reliability, while the locus of control measures shows none at all.

TABLE 1
GEOGRAPHIC DIFFERENCES

Variable	p-value	Area			
		Wisconsin n=98	Washington n=67	Oklahoma n=189	Massachusetts n=135
Religion	.000				
Catholic	(χ^2 test)	25%	36%	24%	69%
Protestant		40%	39%	57%	15%
Other		35%	24%	19%	16%
Cultural Adherence	.000	9.7 b	10.0 b	11.6 a	10.1 b
Religious Commitment	.000	11.3 b	11.4 b	14.3 a	11.8 b
Fate-Orientation	.002	4.4 b	5.0 ab	4.7 ab	5.6 a
Product-Specific Fatalism	.11	5.1	5.0	5.3	5.4
Locus of Control	.71	15.9	16.3	15.9	15.9
Willingness to Try New					
Fashion Products	.31	2.4	2.5	2.5	2.5
Reading Materials	.00	3.2 a	3.1 a	2.9 b	2.9 b
Entertainment	.80	3.3	3.3	3.3	3.3
Technical Products	.66	2.6	2.7	2.7	2.7
Risk Associated with New					
Fashion Products	.02	2.6 b	2.9 a	2.6 b	2.5 b
Reading Materials	.05	1.6 a	1.6 a	1.6 a	1.4 b
Entertainment	.29	2.2	2.4	2.3	2.2
Technical Products	.62	2.4	2.4	2.3	2.3
Age					
22 or younger	.000	13%	75%	88%	96%
Over 22	(χ^2 test)	87%	25%	12%	4%

The alphabetical characters after the mean values indicate the nature of the significant differences of the contrasts.

Lumpkin (1985) found an alpha of .68, but our findings show much less support.

When factor analyses were conducted on the constructs, the fatalism scale and the religious commitment scale were single dimensions as indicated by a scree analysis. The cultural adherence and locus of control measures yielded two factors. Thus, our experience would indicate that those seeking a short locus of control scale for use in survey research should probably not use the Lumpkin (1985) measure. Factor analyses of the willingness to try new products measure and the risk measures each found four groupings of products: fashion-related or symbolic products (fashion clothes, hair styles, dance styles); reading material (books and magazines); entertainment (food and entertainment places); and technological products (cameras, watches, motorcycles, and computers). Factor scores for the four factors were used in further analyses.

REGIONAL DIFFERENCES

Table 1 presents a summary of the marketing and cultural variables across the four areas. The respondents were fairly comparable across regions on most demographics measured except for religion and (unfortunately) age. Graduate students constituted the Wisconsin respondents, while the respondents in the other areas were primarily undergraduates. Some differences across regions can be explained also by age differences, so an analysis using both age and region will be presented later.

The religious distribution varied across the regions with Massachusetts being predominantly Catholic (69%) and Oklahoma predominantly Protestant (57%). Wisconsin had the largest percentage of other (35%), while the Washington distribution was the most balanced across the religious options.

Respondents across the four areas did vary according to cultural adherence, religious commitment, and fate-orientation. Since Oklahoma is located in the conservative Bible Belt, it is not unexpected that respondents from that area expressed the highest level of adherence to traditional cultural values as well as the greatest religious commitment. Areas with the highest percentage of Catholics (Washington and especially Massachusetts) expressed the most fatalistic views; this is consistent with the findings cited by Hirschman (1983b). No differences were found for product-specific fatalism nor for locus of control across the four regions.

Some differences were found across regions for the willingness to try new reading material (books and magazines) and for the risk associated with fashion innovations and new reading materials. Wisconsin and Washington students were more likely to try new books and magazines. Washington respondents perceived a greater level of risk to be associated with symbolic innovations, while Massachusetts respondents perceived the lowest amount of risk associated with new reading materials. That Massachusetts students see the least amount of risk but still are the least likely to try new books and magazines is a somewhat contradictory finding. It had been expected that willingness to try new products would be inversely related to the amount of risk perceived.

Religion (Catholic, Protestant, and other)² and age were also used separately as independent variables in the attempt to explain differences in the cultural and market uncertainty variables (shown in Table 2). Differences in cultural adherence, fate-orientation, and

²International students were deleted from the sample, so that "other" primarily reflects no religious preference. The number of Jews, Moslems, etc., included was too small to treat as a separate category.

TABLE 2
RELIGIOUS AND AGE DIFFERENCES

Variable	p-value	RELIGION			p-value	AGE	
		Catholic n=187	Protestant n=188	Other n=85		<22 n=352	>22 n=132
Cultural Adherence	.00	10.8 a	11.0 a	9.6 b	.01	10.8	10.1
Religious Commitment	.00	13.1 a	13.4 a	10.1 b	.00	13.0	11.4
Fate-Orientation	.03	5.1 ab	4.6 b	5.3 a	.28	5.0	4.7
Product-Specific Fatalism	.01	5.3 a	5.4 a	5.0 b	.01	5.4	5.0
Locus of Control	.16	16.0	16.1	15.6	.14	15.9	16.1
Willingness to Try New Fashion Products	.11	2.5	2.5	2.4	.13	2.5	2.4
Reading Materials	.19	2.9	3.0	3.1	.00	2.9	3.2
Entertainment	.94	3.3	3.3	3.3	.16	3.3	3.3
Technical Products	.38	2.7	2.7	2.8	.12	2.7	2.6
Risk Associated with New Fashion Products	.44	2.7	2.6	2.6	.23	2.7	2.6
Reading Materials	.01	1.5 ab	1.6 a	1.4 b	.36	1.5	1.6
Entertainment	.15	2.3	2.3	2.1	.90	2.2	2.3
Technical Products	.01	2.3 ab	2.5 a	2.2 b	.40	2.3	2.4

The alphabetical characters after the mean values indicate the nature of the significant differences in the contrasts for the religious analysis.

religious commitment were found across religions; however, in most cases, the effect was due almost entirely to the "other" group and not to differences between Catholics and Protestants. "Other" respondents were less likely to adhere to cultural traditions, to have less religious commitment, and to be less likely to blame product failure on fate. However, Protestants were found to be significantly less fatalistic than either Catholics or others. Older (over 22) student respondents showed less adherence to tradition, less religious commitment, and less tendency to blame product failure on chance rather than the manufacturer; however, there were no differences between the two age groups in terms of fate-orientation.

Since religious variation is a major component of geographic subcultures, no further analysis of religious differences was made. However, our intent was to avoid age differences by taking a relatively homogeneous student sample. Since age differences across regions were found and since they are associated with differences in the cultural variables, we investigated the relative effects of both geographic area and age. Due to the fact that the Massachusetts sample had virtually no respondents over the age of 22, we did include an interaction variable. When both age and region are used as independent variables in the ANOVA models, age is not significant while region is for cultural adherence (age: $F(1,454) = .4, p = .53$; region: $F(3,454) = 42.5, p = .00$), fate-orientation (age: $F(1,463) = 1.15, p = .28$; region: $F(3,463) = 5.6, p = .00$), and religious commitment (age: $F(1,463) = 3.6, p = .06$; region: $F(3,463) = 12.8, p = .00$). Thus, the geographic variation associates more with varying cultural values than does age. Similarly, when differences are found for the willingness to try new products and for the risk associated with new products, region is much more significant than age in those cases where one (or both) main effects is (are) significant.

Relating Cultural Variables to the Marketing Uncertainty Variables

The various cultural variables (cultural adherence, religious commitment, fate-orientation, product-specific fatalism, and locus of control) were related to the willingness to try new products and the risk associated with new products using canonical correlations. The results are summarized in Table 3. The set of cultural variables is related to both the willingness to innovate and the risk factors; however, the small redundancy values indicate that the cultural values do not explain a great deal of variance in either set of dependent variables.

For the willingness to try new products variables, the first canonical correlation is significant ($R_c = .31, p = .00$). Cultural adherence and (to some degree) fate-orientation variables are inversely related to the willingness to try non-technical products (reading materials, fashion, and entertainment). As expected, the stronger the ties to current cultural values and the more fatalistic the respondent is, the less willing one is to try new non-technical products. The willingness to try technical products is not related directly nor inversely to the cultural variables.

Greater risk is associated with non-technical products by those who have higher levels of religious commitment and by those who are more fatalistic. Again, the risk associated with technical products is not related (inversely nor directly) to the cultural variables.

CONCLUSIONS

Geographic regions do vary in terms of innovativeness and the levels of perceived risk. Further, differences exist across regions in terms of cultural adherence, religious commitment, and fate-orientation. Finally, the results indicate that the varying cultural values can explain differences in the marketing variables. Residents in those areas with more adherence to traditional values are less likely to try new products. Residents in areas with higher levels of religious

TABLE 3
CANONICAL CORRELATION RESULTS

Cultural Variables with the Willingness to Try New Products

Canonical	RootCorrelations	p-value	Coefficients for the First Canonical Correlation				
1	.31	.00	Cultural Variables:				
2	.17	.17	Product-				
3	.08	.82	Cultural	Religious	Fate-	Specific	Locus of
4	.02	.93	Adherence	Commitment	Orientation	Fatalism	Control
			-.99	.31	-.42	.05	.22

Redundancy = .097

Willingness to Try New Products:			
Fashion	Reading	Entertainment	Technical
.56	.61	.35	.16

Cultural Variables with the Risk Associated with New Products

Canonical	RootCorrelations	p-value	Coefficients for the First Canonical Correlation				
1	.21	.02	Cultural Variables:				
2	.16	.22	Product-				
3	.10	.61	Cultural	Religious	Fate-	Specific	Locus of
4	.02	.88	Adherence	Commitment	Orientation	Fatalism	Control
			.23	.65	.43	.47	-.27

Redundancy = .083

Willingness to Try New Products:			
Fashion	Reading	Entertainment	Technical
.37	.56	.49	-.22

commitment and fate-orientation may perceive higher levels of risk associated with new products.

Inadvertently, our study varied age as well as geographic region and we found that the cultural values held by older students differ from those held by younger students. However, geographic area was a much better explanatory variable for both cultural differences and differences in innovativeness and perceived risk.

One implication of these differences in students across regions is that the results challenge the common assumptions that all students are similar. Student subjects have been shown to differ from adult subjects for many types of behavior (Enis, Cox, and Stafford 1972; Hawkins, Albaum, and Best 1977; Park and Lessig 1977; Permut, Michel, and Joseph 1976; Shuptrine 1975). This study points out that student samples may well vary across the United States in terms of their cultural composition.

Thus, the study provides support for the existence of geographic subcultures and for the proposition that cultural differences across areas of the United States result in varying consumption patterns.

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Time Budgets and Consumer Leisure-Time Behavior: An Eleven-Year- Later Replication and Extension (Part II - Males)

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Abstract

In a continuation of a paper presented at the 1986 ACR Conference, the author discusses the results of an analysis of the male data, comparing 1973 and 1984 study results. It is found that males significantly increased the amount of time spent, on-the-average, per week in seven leisure-time activities in contrast to females (Hawes 1987) who spent essentially an identical number of hours in these activities in both years.

Background and Overview of the Study

This paper continues and completes the analysis of changes in self-reported time budget allocations which occurred between 1973 and 1984, by focusing on the males in the sample. An earlier paper (Hawes 1987) presented the results of the analysis of the female respondent data. Splitting the analysis was necessitated by the manuscript length limitations in these *Proceedings*.

Interest in time allocation/time budgets in the discipline of consumer behavior goes back many years (Hawes 1977, 1979, 1987; Harvey, et al. 1984; Juster and Stafford 1985). The special issue of the *Journal of Consumer Research (JCR)* of March, 1981 was devoted entirely to the "consumption of time." The utility of time-usage studies is summed up by Feldman and Hornik (1981) in that particular issue of *JCR* as follows (p. 407):

Time budget decisions and the factors that result in their differential allocation across consumer groups furnish clues to broad currents of influence on consumption decisions by suggesting whole classes of needs to be satisfied. They also provide a means by which socioeconomic and behavioral data might be used to segment markets on the basis of common time budgets.

These two authors go on to state that "More longitudinal studies are needed to deepen our understanding of the patterns of temporal behavior" (Ibid, p. 417).

The appropriateness of demographic variables -- especially age, employment status, occupation, sex, education, marital status, dwelling location and family size -- as predictors of time use has been well established (Szalai 1972, Robinson 1977, Juster and Stafford 1985). Education and occupation are two demographic variables that have been found to be especially good predictors of time use -- the activities it is expended on and the relative amounts spent on each. (Settle, Alreck and Belch 1979; Feldman and Hornik 1981). As the author had used specific demographic variables in the analysis of the 1973 data, and as the intent here is to compare usages over time, the same demographic variables have been selected for use in categorizing the 1984 data.

Further background discussion was provided in Hawes (1977, 1987) and will not be repeated here.

The particular research questions addressed in this paper are as follows:

1. How did male Americans in 1984 allocate, on-the-average, their fixed weekly time budget of

168 hours, and how does this allocation pattern differ from that found in 1973?

2. How did males allocate their time to a number of leisure-time activities in 1984 (by selected demographic categories), and what changes in this allocation pattern have occurred since 1973?
3. How good are the selected demographic variables in explaining the variance in time spent by males in 1984 in the set of leisure-time activities?

Research Methodology

This study utilized data taken from a representative nationwide sample of 1650 households surveyed by Market Facts, Inc. (Chicago) during the late Spring of 1984. The particular households surveyed were selected from Market Facts 60,000+ household Consumer Mail Panel (CMP), and the sample was "balanced" on five variables so that the household demographic composition closely paralleled the continental civilian adult noninstitutionalized population as defined by the U.S. Census Bureau's Current Population Survey in March 1983. The five balancing variables were (1) geographic region, (2) population density, (3) total annual household income, (4) household size, and (5) age of female head-of-household. These are the same variables used in balancing the 1973 study (also done through Market Facts, Inc.). Further details on that sample are found in Hawes (1977).

The 1650 household sample was comprised of 872 households in which the female head indicated she was married. Each female received a 16-page questionnaire; each male spouse (where present) an 8-page instrument. A total of 485 male questionnaires were returned for an overall response rate of 56 percent. Overall, 1090 households responded. Since Market Facts, Inc. has a complete demographic file on each CMP household, it was thereby possible to examine the 560 non-respondent households.

With only two exceptions, the differences between the initial sample of households, respondents, and non-respondents did not exceed 5 percent in any demographic balancing variable category. The initial sample tracked the national quota within a maximum difference of 2.6 percent. With regard to household size, the largest difference was between respondents and non-respondents in the single member household category; 11.3 percent more single women returned the questionnaire than did not.

There is a slight upward age bias in that there are nearly 16 percent more respondents in the "60 and over" age group than non-respondents, though in the middle years the difference between the two groups does not exceed 5 percent. At the youngest ages, non-respondents exceed respondents by nearly 10 percent.

Findings of the Study

An important distinction made in the current study is between all of the males who responded to the survey, and the subset of those respondents who actually did participate in any given activity. In presenting the

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results, the word 'respondents' is used to designate all of those who responded to the survey, while the word 'participant' refers to only those respondents who engaged in the particular activity under discussion. Table 1 compares the mean hours per week spent in different activities, both for all the male respondents and for male participants only, in both 1973 and 1984. The columns labeled "respondents" include both participants and non-participants and therefore is reflective of the U.S. population as a whole (to the extent that the sample was). The greater the difference in means, the more non-participants in the activity in the sample (population), and hence the greater the need to examine participants separately from overall population averages. The generally higher means among participants in 1984 over 1973, probably reflects the older population (and hence sample) and the more time available to retirees, for example, to devote to these activities. Further investigation of potential moderator variables is beyond the scope of this paper.

The data in this Table support the findings of others (Adams 1984; Hedges and Taylor 1980; Fuchs 1986) that there has been a decline in male hours of paid (market) work. This is also reflected in a concomitant (statistically significant) decline in time spent in commuting and in "other direct work-related activity".

Since this is not reflected in the means of participants, it means more of the males in this sample were unemployed than was the case in the 1973 study. This may in part be caused by the aging of the population and hence an increase in the number of males in their post-retirement years.

This is born out by Table 2. In fact, the 1984 sample, although "balanced" on the panel member's (female's) age, also contains appreciably more males in the 65-and-over age category than in 1973. This is a function of both the greater proportion of females in this age bracket in 1984 and the tendency for women to marry males their age or older. Of more significance is the noticeable decline in average work hours-per-week spent by older men over the time period. There has not been a significant decline in either hours spent at work, or in work plus commuting and other work-related activities, over the eleven year period among males aged 54-and-under. Evidently more males are retiring earlier than was the pattern in 1973, as the decline seems to be concentrated in the 55-and-over age brackets. The danger in just looking at 65 as the "break-point" is clear from the significance of the decline in work-time of the under-65 group...when in fact this is strictly a function of the 55-64 group's decline.

TABLE 1
Mean Hours Per Week Spent by Male Respondents and by Male Participants in Indicated Activities
1973 vs. 1984

ACTIVITY	Respondents				Participants Only			
	1973		1984		1973		1984	
	Mean (hrs.)	% of 168 hrs.	Mean (hrs.)	% of 168 hrs.	Mean (hrs.)	% of Respondents	Mean (hrs.)	% of Respondents
Sleeping, napping	51.1	30.5(a)	51.7	30.5%	51.8	99%	51.7	100
Eating Meals	11.5	7.0	12.0	7.0	11.6	99	12.0	100
Personal care	6.7	4.0	7.4	4.5	6.8	98	7.4	99
Working at your job	41.0	24.5	32.4(c)	19.0	46.7	88	46.1	72(d)
Commuting to/from work	4.6	2.5	3.7(c)	2.0	5.6	82	5.8	66(d)
Other direct work related activity	3.3	2.0	2.3(c)	1.5	6.4	53	6.4	40(d)
Housework, necessary house maintenance and lawn care	5.7	3.5	8.1(c)	5.0	6.7	86	8.9(f)	92
Shopping	1.9	1.0	2.3	1.5	3.0	63	3.3	71(d)
Education (incl. class time, homework time and related travel time)(b)	----	----	.7	.5	----	----	6.0	17
Playing with/helping your children	5.0	3.0	4.2	2.5	8.6	59	8.9	51(e)
Reading newspapers and magazines	5.1	3.0	6.5(c)	4.0	5.6	92	7.0(f)	93
Watching television	14.3	8.5	17.2(c)	10.0	14.8	96	17.6(f)	98
Hobbies, game, crafts, etc.	4.1	2.5	3.9	2.5	6.5	64	7.2	56(e)
Visiting with friends, relatives, socializing	4.7	3.0	5.1	3.0	5.4	88	6.0	86
Participating in sports and outdoor recreation	1.9	1.0	3.0(c)	2.0	4.9	38	7.1(f)	47(e)
Attending sporting event as a spectator	.9	.5	.9	.5	3.1	29	3.8	27
Entertainment outside the home (other than sporting events)	3.2	2.0	1.9(c)	1.0	5.4	60	4.4(f)	46(d)
	N = 512		485		(Varies)		(Varies)	
	98.5%		97.0%					

- (a) Percentages rounded to nearest 0.5%
- (b) This category did not appear on the 1973 questionnaire.
- (c) Difference between 1973 and 1984 male means significant at .01 level or greater (Z-test, 2-tailed).
- (d) Difference between 1973 and 1984 percentages of participants significant at .01 level (").
- (e) Difference between 1973 and 1984 percentage of participants significant at .05 level(").
- (f) Difference between 1973 and 1984 means of participants significant at .001 level or greater (except "entertainment" which is significant at the .03 level) (Z-test, 2-tailed)

Table 2
 MEAN HOURS PER WEEK SPENT AT WORK, AND IN WORK, COMMUTING
 AND OTHER WORK-RELATED ACTIVITIES COMBINED - ALL MALES,
 1973 AND 1984

Age Bracket	N's		Mean Hrs Per Week Spent at Work			Mean Hrs Per Week Spent in Work and Related Activities		
	'73	'84	'73	'84	Signif.(b)	'73	'84	Signif.(b)
25 - 34(a)	150	80	47.6	49.4	----	56.7	57.0	----
35 - 44	63	90	47.1	45.5	----	55.4	55.8	----
45 - 54	93	80	44.2	42.4	----	51.8	49.3	----
55 - 64	77	82	38.2	29.2	.007	47.5	34.2	.001
65 and over	65	144	15.4	8.3	.02	21.7	12.4	.007
55 and over	142	226	27.8	15.9	.001	35.6	20.2	.000
Under 65	447	341	44.7	41.1	.002	53.1	49.2	.007

(a) The less-than-25 category was dropped because of few respondents in 1984.

(b) Based on Z-test for the difference between means (uncorrelated data, two-tailed test).

Returning to Table 1, one notes that there has been a significant increase among both respondents and participants in the amount of time they spent on "housework, necessary home maintenance and lawn care" - a 42 percent increase among respondents and a 33 percent increase among participants. More men are helping out "more" around the house in 1984 than was the case in 1973. This finding is also supported by Fuchs (1986), although his finding of a 3 percent increase between 1959 and 1983 suggests a U-shaped function with a dip in the 1960-1980 time period. There are also significantly more men involved with shopping for the family in 1984, although the mean hours per week spent in this activity did not increase significantly since 1973.

It is sociologically interesting to note the decline in the mean hours spent by male respondents in playing with their children. The difference between 1973 and 1984 just barely misses the usual statistical significance level (significant at the .06 level), while the proportion of the respondents who actually did spend some amount of time in this activity *did* decline significantly.

Using the activities from "reading newspapers and magazines" to the end of the list as defining leisure-time pursuits for the purposes of this study, we note that the total number of hours spent by male respondents across all these activities increased 12.5 percent over the period - from 34.2 hours to 38.5 hours per week. Participants in these activities "got with it" even more - a 16 percent increase from 45.7 hours per week to 53.1 hours per week in 1984. As the Table shows, the proportion of participants grew in some activities and declined in others.

Time spent with the media increased significantly in both groups, while the proportion of participants stayed about the same. The percentage increase in both groups was about equal. This indicates a net gain in time spent on these activities. Print media is not dead! By the same token, men were spending about one-fifth more time in front of "the tube" in 1984 than in 1973.

The widely heralded growth in interest in fitness is reflected in the significant increase in time spent by both groups in outdoor recreation and sports. Nearly half of all respondents reported participating in such activities in 1984 - an increase of 24 percent from 1973. Not only are more men into these activities, but they are also spending more time per week on them. Participants

increased their time spent by a very significant 45 percent, while the total sample's time increased 58 percent (reflecting the higher participation rate).

This increase in time spent participating in sports and outdoor recreation has come in part from an equally significant decline in time spent in entertainment outside the home. The number of males reporting time spent in this activity also experienced a major decline of 23 percent - from 60 percent to 45 percent. Again, the popular media have reported on the growth in VCR's and home entertainment centers.

Finally, although the mean hours did not change significantly, appreciably (13 percent) fewer men reported engaging in "hobbies, games, and crafts" in 1984 than in 1973.

Table 3 displays the mean hours per week spent by all males in the seven leisure-time activities in 1973 and 1984. "Playing with or helping your children" has been included because for some this is a leisure activity, while for others it may not be. In any event, it is interesting from a sociological perspective again to note the changes. "All males" are reported on here because it better reflects the national population and also in order to keep cell frequencies reasonable. The difference in the way Market Facts, Inc. grouped income in the two years precludes a direct comparison across that category. General high-low trends can be noted, however.

The decline in time spent with children is most pronounced in the youngest age group, among those with "some college" (although the two lesser educated groups also declined noticeable), among both professionals and those males at the other extreme of the occupational continuum, among those households likely containing only one child, and among central-city dwellers.

The increase in time spent with newspapers and magazines is most noticeable in the oldest age group, with those 55-64 also showing an increase. The increase is essentially independent of education level and place of residence, but seems to be most pronounced at both ends of the occupational spectrum and in households of two members.

Television viewing follows a similar pattern with the greatest increases in the two oldest age groups, although the increase with age begins with the 35-44 group. Education level is inversely correlated with time spent watching television (in both absolute amount and

Table 3
Mean Hours Per Week Spent in Selected Time Budget Categories by Demographics All Males, 1973 and 1984

	N ^a		Playing with or helping your children		Reading newspapers and magazines		Watching TV		Hobbies, games, crafts, etc.	
	'73	'84	'73	'84	'73	'84	'73	'84	'73	'84
Age										
25-34	150	80	8.0	7.6	3.8	3.2	14.1	13.4	3.7	3.2
35-44	63	90	5.4	7.3	4.4	3.9	13.0	15.1	3.5	2.0
45-54	93	80	2.9	4.1	5.0	4.7	13.4	16.1	3.0	4.5
55-64	77	82	1.4	2.5	6.8	7.7	12.9	18.7	5.3	4.5
65 and over	65	144	1.2	1.4	8.4	10.4	18.0	20.7	5.6	5.1
	448	476	3.8	4.6	5.7	6.0	14.3	16.8	4.2	3.9
Education										
Less than High School Graduate	137	102	3.7	2.6	4.4	7.6	14.7	22.4	4.0	3.0
High School Graduate	164	175	5.8	4.8	4.9	6.0	14.5	17.1	4.3	4.7
Some College	109	105	6.0	4.3	5.5	6.6	15.5	15.8	3.8	3.9
College Grad. or Post-Grad.	95	96	4.3	5.2	5.8	6.8	11.7	14.2	4.4	3.5
	505	478	5.0	4.2	5.2	6.8	14.1	17.4	4.1	3.8
Total HH Income										
<u>1973</u>										
\$4,000-\$9,999	219	--	5.9	--	4.9	--	15.3	--	4.5	---
\$10,000-\$14,999	172	--	5.0	--	4.6	--	14.3	--	3.9	---
\$15,000 or more	121	--	3.2	--	6.1	--	12.3	--	3.6	---
	512	--	4.7	--	5.2	--	14.0	--	4.0	---
<u>1984</u>										
\$10,000-\$14,999	--	55	--	2.4	--	9.9	--	19.2	--	5.4
\$15,000-\$19,999	--	62	--	4.5	--	7.3	--	20.8	--	5.1
\$20,000-\$29,999	--	128	--	4.4	--	6.2	--	17.6	--	3.2
\$30,000-\$39,999	--	95	--	5.5	--	5.3	--	16.2	--	4.1
\$40,000 or more	--	97	--	3.3	--	5.6	--	14.0	--	3.4
	--	437	--	4.0	--	6.9	--	17.6	--	4.2
Occupation										
Professional	58	51	6.1	4.6	5.0	5.7	12.2	13.8	3.6	3.0
Managerial/Adm.	67	58	4.1	5.2	5.6	5.4	13.0	16.3	3.7	3.3
Clerical or Sales	67	39	3.7	6.4	4.9	3.8	13.7	17.0	5.1	3.9
Craftsman/Kindred	106	78	5.2	6.1	4.5	3.5	13.4	13.9	3.3	2.8
Operative	74	30	7.0	4.3	3.3	3.6	13.6	18.0	3.4	2.6
Laborer, farmer	63	31	6.2	4.6	4.2	6.6	14.3	12.3	3.1	1.8
	435	287	5.4	5.2	4.6	4.8	13.4	15.2	3.7	2.9
Household Size										
2	212	235	1.4	1.4	6.1	9.0	14.7	19.4	4.6	5.0
3	124	95	7.8	5.7	4.6	4.3	13.5	17.1	3.8	2.9
4	137	89	7.5	8.0	4.2	4.4	14.1	14.7	3.9	3.1
5 or more	39	65	6.5	7.5	4.7	4.3	14.9	13.0	2.9	2.9
	512	484	5.6	5.7	4.9	5.5	14.3	16.0	3.8	3.5
Population Density/ Degree of Urbanization										
Rural	125	154	4.4	4.1	4.3	6.1	12.4	17.1	3.8	3.9
Urban	231	216	5.1	4.7	5.4	6.4	14.5	16.6	4.8	4.2
Central City	156	115	5.2	3.7	5.3	7.3	15.4	18.3	3.2	3.4
	512	485	4.9	4.2	5.0	6.6	14.1	17.3	3.9	3.8

^a Number of respondents in the demographic category segment. Cell values in the Table are mean hours-per-week "on the average."

Table 3 (cont.)

	Visiting with friends/ relatives		Participating in sports or outdoor recreation		Attending sporting events as a spectator		Entertainment outside home (other than sporting events)		Totals ^b	
	'73	'84	'73	'84	'73	'84	'73	'84	'73	'84
Age										
25-34	4.6	5.5	2.3	3.2	0.8	0.9	3.8	1.8	33.1	31.2
35-44	4.8	3.4	2.8	2.4	1.1	0.7	3.3	1.6	32.9	29.1
45-54	3.7	4.9	1.2	2.5	0.7	1.2	2.6	1.7	29.6	35.6
55-64	4.0	5.5	1.1	2.7	0.8	0.6	2.9	1.1	33.8	40.8
65 and over	5.3	5.7	0.6	3.9	1.0	0.9	2.7	2.5	41.6	49.2
	4.5	5.0	1.6	2.9	0.9	0.9	3.1	1.7	34.2 ^c	37.2 ^c
Education										
Less than High School										
Graduate	5.0	6.3	1.2	2.5	0.8	1.2	3.5	1.7	33.6	44.7
High School Graduate	4.8	5.8	2.3	3.4	1.0	0.8	3.0	1.6	34.8	39.4
Some College	5.0	4.3	1.8	2.9	0.6	0.7	3.2	1.8	35.4	36.0
College Grad. or Post Grad	4.0	3.9	2.3	3.0	1.1	0.9	3.1	2.4	32.4	34.7
	4.7	5.1	1.9	3.0	0.9	0.9	3.2	1.9	34 ^c	38.7 ^c
Total HH Income										
1973										
\$4,000-\$9,999	5.4	---	2.0	---	0.9	---	3.1	---	36.1	---
\$10,000-\$14,999	4.2	---	1.7	---	0.8	---	3.1	---	32.6	---
\$15,000 or more	4.4	---	2.1	---	1.0	---	3.7	---	33.2	---
	4.7	---	1.9	---	0.9	---	3.3	---	34.0 ^c	---
1984										
\$10,000-\$14,999	---	6.0	---	3.2	---	0.9	---	1.8	---	46.4
\$15,000-\$19,999	---	6.2	---	4.6	---	2.5	---	1.5	---	48.0
\$20,000-\$29,999	---	5.5	---	2.9	---	0.6	---	1.8	---	37.8
\$30,000-\$39,999	---	4.6	---	3.4	---	0.4	---	2.3	---	36.3
\$40,000 or more	---	4.0	---	2.7	---	0.8	---	1.6	---	32.1
		5.3		3.4		1.2		1.8		40.1 ^c
Occupation										
Professional	3.8	3.9	2.8	3.1	1.3	1.0	2.9	2.2	31.6	32.7
Managerial/Admin.	3.8	4.2	2.1	2.3	0.8	0.4	3.0	1.4	32.0	33.3
Clerical or Sales	5.1	3.9	2.4	3.2	1.3	0.7	3.1	1.8	35.6	34.3
Craftsman/Kindred	5.3	4.1	1.6	2.4	0.9	1.0	3.5	1.3	32.5	29.0
Operative	5.6	7.1	1.7	2.1	0.4	0.4	3.7	1.9	31.7	35.7
Laborer, farmer	3.6	5.7	1.8	1.2	0.5	0.5	2.5	1.5	30.0	29.6
	4.5	4.8	2.1	2.4	0.9	0.7	3.1	1.7	32.2 ^c	32.4 ^c
Household Size										
2	5.2	5.8	1.8	3.4	0.9	0.7	3.4	2.3	36.7	45.6
3	5.2	4.5	2.2	2.7	0.6	1.1	2.9	1.4	32.8	34.0
4	3.8	4.0	2.0	2.6	0.9	0.9	3.3	1.4	32.2	31.1
5 or more	4.0	5.3	1.0	2.9	1.3	1.2	3.3	1.5	32.1	31.1
	4.6	4.9	1.8	2.9	0.9	1.0	3.2	1.7	33.5 ^c	35.5 ^c
Population Density/ Degree of Urbanization										
Rural	4.5	5.7	1.4	2.7	0.8	1.1	2.8	1.6	30.0	38.2
Urban	5.0	5.0	2.0	2.7	0.8	0.8	3.5	2.0	36.0	37.7
Central City	4.6	4.7	2.1	3.9	1.0	0.6	3.1	2.0	34.7	40.2
	4.7	5.1	1.8	3.1	0.9	0.8	3.1	1.9	33.6 ^c	38.7 ^c
									Overall Averages	33.6 36.8

^b Totals exclude time spent "playing with or helping your children."

^c Unweighted averages

amount of change) up through "some college". College graduates, while watching TV the least, did show a 21 percent increase in time spent with "the tube" over the eleven-year period. Only laborers/farmers watched less TV in 1984 than in 1973, while craftsmen/kindred showed essentially no change. Males in households of 2 or 3 showed a significant increase in television watching; those in households of 4 or more showed either little change or an actual decline. Rural males showed the largest increase, although all levels of urbanization showed some increase.

Overall, the average across all demographic categories, except occupation (since it doesn't include retirees), was 14.1 hours per week in 1973 (with very minimal variation across demographic categories), and 16.6 hours in 1984 (with slightly more variation). This amounts to a 18 percent increase between the two studies, and is noticeably different from the situation with females where the reported hours "did not" change between the two studies (Hawes 1987). While men on average watched less TV per day than women in 1973; by 1984 they watched more (2.24 hours per day for women in both years; 2.00 for males in 1973, 2.37 for males in 1984 (based upon an overall average across all demographic categories)). As noted in the earlier paper (Hawes 1987), these figures are considerably below the Nielsons (A.C. Nielson 1985) for 1982-83 season, but very close to the 1975 and 1981 figures reported by Juster and Stafford (1985). Undoubtedly the larger numbers of older males in the population (and hence in the sample) affect these figures.

The decline in time spent on hobbies, games and crafts is most pronounced among males in the two youngest age groups, among those with either no high school degree or with a college degree, in either clerical/sales or laborer/farmer occupations (although all occupational groups showed a decline), in households with one or two children, and in "urban" areas (though the decline was small).

Although the overall time spent visiting friends and relatives did not show a statistically significant increase over the period, there was some upward change. Looking across the demographic categories, we can see that the increase was concentrated among those in the two oldest age groups, those with a high school degree or less, those in the operative/laborer/farmer occupations, those in large households, and those in rural areas.

Table 1 indicated a significant increase in time spent participating in sports or outdoor recreation. An examination of Table 3 indicates that this increase was most prevalent in the three oldest age groups (particularly among those over 55), in clerical/sales/craftsman/kindred occupations (among those employed), in households of either 2 or 5-or-more, and among those males living in central-city areas. Rural males also showed a noticeable increase. Given the large rise in time spent in this activity among those "over 55", one suspects that many of these men are retired. That would explain why there is not a more pronounced rise across the occupational categories. It would also partially explain the large increase from households of two people.

There was no change overall in the hours per week "on-the-average" spent attending sporting events as a spectator - the figure remaining at .9 hours/week. It is noteworthy that males 35-44, those in clerical/sales positions, and those in central-city areas recorded an

appreciable percentage decline in time spent in this activity; while those with less than a high school degree, those in households of 3, those in rural areas, and (apparently) those in the \$15,000 - \$20,000 income bracket showed appreciable percentage increases.

Finally, the significant decline in time spent in entertainment outside the home (other than sporting events) noted in Table 1 is reflected here in the large percentage declines in all demographic categories. These declines in the averages of each category across the eleven years range from 39 to 62 percent. They appear to be concentrated in all *but* a) the oldest age group, b) those with a college degree and c) those in professional occupations. All other groups within each demographic category showed high percentage declines.

It was noted in the earlier paper (Hawes 1987) that the female respondents spent essentially an identical number of hours per week, on overall average, in the seven leisure-time activities in both 1973 and 1984 -- namely 37 hours per week. Males overall, on the other hand, reported an overall 10 percent increase in time spent in these activities between 1973 and 1984, going from 33.5 hours per week in the earlier study to 36.8 hours per week in 1984. It should be noted, however, that employed males showed "no" change in their hours-per-week devoted to these seven activities, holding at 32.4 hours per week.

If one converts the total hours per week to a percentage of 168, the differences in percentages for the categories of education, income, and population density/urbanization are statistically significant at the 10 percent level (Z-test, 2-tailed). This is not a very high level of significance, but given the precision of the data, it at least indicates a tendency toward change and supports the reported net increase in discretionary time among males implied by Hedges and Taylor (1980), Stafford (1980), and McAdams (1987).

Table 4 presents the results of a Multiple Classification Analysis of the seven leisure-time activities plus "playing with/helping your children" as individual dependent variables, and the six demographic variables as independent (predictor) variables. The Eta-coefficients show the bivariate correlation between each predictor variable (demographic) and each dependent variable (time budget category). It indicates the ability of the predictor, using the specific levels (categories) given, to explain variation in the dependent variable. " Eta^2 is the correlation ratio and indicates the proportion of the total sum of squares explainable by the predictor" (Andrews, et al 1973, p. 7).

The Beta-coefficient (essentially a partial-regression coefficient) provides a measure of the ability of the predictor to explain variation in the dependent variable after adjusting for the effects of all other predictors. Finally, the R^2 represents the proportion of variation in each dependent variable explained by the additive effects of each of the predictor variables. Most of the comments that follow will be based upon the Beta-coefficients.

First, it is clear that these demographic variables, as configured, do the best job in explaining the variance in "attending sporting events as a spectator," "playing with/helping your children," and "reading newspapers and magazines." At that, demographic variables, and in particular education, THI and occupation, are particularly good only in explaining the variance in attending sporting events. Evidently this activity, given a certain

TABLE 4
Multiple Classification Analysis of Time Spent By Male Participants in 1984 in Selected Leisure-Time Activities By Demographic Predictors

DEMOGRAPHIC VARIABLE (Predictors)	Playing with or helping your children		Reading newspapers and magazines		Watching TV		Hobbies, games, crafts, etc.	
	eta(a)	beta(b)	eta	beta	eta	beta	eta	beta
AGE	0.38	0.32	0.35	0.31	0.07	0.04	0.12	0.12
EDUCATION	0.10	0.12	0.10	0.03	0.20	0.28	0.25	0.32
TOTAL HOUSEHOLD INCOME	0.22	0.20	0.14	0.12	0.09	0.10	0.16	0.19
OCCUPATION	0.12	0.14	0.21	0.24	0.19	0.21	0.12	0.14
HOUSEHOLD SIZE	0.22	0.16	0.24	0.15	0.17	0.15	0.10	0.18
POPULATION DENSITY/ DEGREE OF URBANIZATION	0.03	0.02	0.05	0.03	0.06	0.08	0.16	0.19
ANOVA MAIN EFFECTS (F, Significance of F)	(2.54, .010)		(4.33, .001)		(2.12, .009)		(2.03, .050)	
R ²	.23(c)		0.20		0.11		0.15	

Continued

DEMOGRAPHIC VARIABLE (Predictors)	Visiting with friends/ relatives		Participating in sports or outdoor recreation		Attending sporting events as a spectator		Entertainment outside home (other than sporting events)	
	eta	beta	eta	beta	eta	beta	eta	beta
AGE	0.03	0.08	0.19	0.28	0.25	0.20	0.12	0.18
EDUCATION	0.19	0.21	0.15	0.26	0.38	0.54	0.07	0.22
TOTAL HOUSEHOLD INCOME	0.18	0.16	0.10	0.17	0.36	0.47	0.13	0.17
OCCUPATION	0.21	0.21	0.13	0.31	0.32	0.42	0.20	0.34
HOUSEHOLD SIZE	0.15	0.15	0.16	0.16	0.30	0.25	0.13	0.16
POPULATION DENSITY/ DEGREE OF URBANIZATION	0.09	0.10	0.10	0.13	0.13	0.16	0.12	0.15
ANOVA MAIN EFFECTS (F, Significance of F)	(1.77, .044)		(1.77, .101)		(27.24, .010)		(1.45, .246)	
R ²	0.13		0.15		0.51		0.13	

a Correlation ratio between predictor and dependent variable.

b Analogous to eta, but based on adjusted means rather than raw means; i.e., similar to standardized regression coefficient.

c Proportion of variance in dependent variable explained by all predictors together.

background situation, has the lowest dispersion of independent variable data points around the "multiple regression line", or in other words has a low variation across these three demographic variable categories. Much of the variance in playing with/helping your children and reading newspapers/magazines is accounted for by the age variable, with younger males clearly spending more time with their children than older males, and vice versa when it comes to having the time to read.

The absence of strong R² values for the other time budget categories suggests that other predictors, such as life-style (AIO) or social class variables, may be much more important in explaining the variance in these other time-use situations. This is supported by the relative strength of the social class component variables of education and occupation in explaining variance in the other leisure-time activities, and these two variables' role in the development of one's life-style as suggested by (Wells (1974, p. 99ff) and Engel and Blackwell (1982, p. 188ff)). The strength of these two demographic predictors of time usage has also been noted by Settle,

Alreck and Belch (1979) and others (Feldman and Hornik 1981).

Conclusions and Implications

The findings presented in this short paper complement those reported earlier on female's use of time in 1973 and 1984 (Hawes 1987). As in the earlier paper it is comforting, in one sense, to note the support in these findings for trends reported in the popular press.

The 12 percent increase in time spent on these seven leisure-time activities over this eleven-year period brings males, on-average and reflecting an older population, to a point of "equality" with females in the amount of weekly time devoted to this group of activities. It seems clear that men are, again on-average, doing more around the house in home and family-related chores. The decline in the average number of paid hours of work "at your job", particularly among men aged 55 and over, buttresses the time-availability aspect of this increase in involvement. While it is beyond the scope of this paper to delve into the cultural and social forces underlying this growth in male involvement around the

house, perhaps the reported growth in an "ethic of commitment" (Yankelovich 1982) is a factor. Given the aging of the population, the apparent trend toward earlier retirement (or at least cutting back the number of hours worked - where possible) has both economic and public policy implications that also go beyond the scope of this paper.

As noted, the apparent sociological implications of fathers (and mothers) spending less time with their children is of concern. Fuchs (1986) reports a 24 percent decline in hours devoted to child care by women between 1959 and 1983, and a 22 percent decline in the hours devoted to this activity by men over the same period. Clearly the data as presented here do not tell the full story. Such factors as fewer children, delayed childbearing, the aging of "yuppie-puppies" past first grade, the growing acceptance of both in-home child care (nannies) and out-of-home care (day care centers), the general aging of the population and attendant concern with several-times-a-week physical fitness activities all have a bearing on the growing change in time spent with children. This issue needs careful longitudinal monitoring, in the vein of the Yankelovich Monitor, SRI's VALS, etc. rather than speculation in the Sunday supplements.

In summary, these data represent an attempt at replication -- an important dimension of consumer behavior research not frequently enough addressed. The sample clearly has more older males in it than 1973's sample, but then it intentionally reflects an older population. The findings do highlight certain changes in share-of-time-budget which suggest a trend toward more home-centered, adult-centered activities, and away from outside-the-home involvements. Further life-style profiling of participants vs. non-participants in these eight activities is certainly warranted.

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Individual and Dyadic Consumption of Time: Propositions on the Perception of Complementarity and Substitutability of Activities

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ABSTRACT

The perceived complementarity and substitutability of discretionary activities is reflected in the time allocated to such activities. The inter-relationship between perceptions of activities has been tied to the differences in the characteristics of husbands and wives. Propositions are developed and presented that are based on participation in and perceptions of activities. The implications for consumer behavior researchers are discussed.

INTRODUCTION

Since the early work of Jacoby, Szybillo, and Berning (1976) who recognized the concept of time in the consumer behavior area, researchers have been involved in examining numerous topics regarding the consumption of time. Some studies have investigated issues such as, conceptualization and model building (c.f., Feldman and Hornik 1981), usefulness of time allocation as a predictor of other forms of consumption (Lee and Ferber 1977), and differences in behavior across family life cycle stages (c.f., Hendrix 1980). Other studies have examined differences in the consumption of time between working and nonworking wives (c.f., Nickols and Fox 1983), among individuals participating in leisure versus discretionary activities (c.f., Hawes 1977), and in the complementarity and substitutability between discretionary activities (Holbrook and Lehmann 1981).

Time As A Consumable

In any given day (or lifetime for that matter) an individual has a finite amount of time to allocate to various activities. Some activities are "necessities" and "must" be accomplished while other activities are discretionary. Thus, time can be viewed as a resource to be allocated and the activities an individual becomes involved in as "purchases" made with the resource. Some types of activities can be undertaken together while others are mutually exclusive. This distinction becomes particularly relevant for consumer decision-making when an individual has some choice about time allocation which can be assumed to occur during discretionary time allocation.

According to Henderson and Quandt (1958) and as operationalized by Holbrook and Lehmann (1981), activities are substitutes if both can satisfy the same need of the consumer. Activities are considered complements if they are consumed jointly to satisfy a broader need. For example, at a particular point or span in time one might view participation in handball or racquetball as substitute activities. Due to a limited amount of available discretionary time, an individual may have only enough time to participate in one of these activities to satisfy a given leisure need or goal. On the other hand, a person might be jointly involved in both aerobic exercises and baseball, with the motivation being to improve one's overall physical condition for playing better baseball. Such situations reflect a

perceived and operationalized complementarity between aerobic exercises and baseball. Complementary activities need not necessarily have to occur at the same time or one after the other. Complementarity can be defined over a period of time, such as a week, a month, or a year.

Purpose and Conceptual Framework

Holbrook and Lehmann (1981) have established the importance of research in this area for consumer behavior. Their approach suggests that the perceptions about the interdependence of activities are reflected in the activities indulged in by the consumer. We use this concept to develop propositions about the perception of discretionary activities of husbands and wives. Our paper reviews literature in sociology, economics, and consumer behavior to identify potential factors that may influence the perceptions of complementarity and substitutability of activities in the allocation of time. Three major factors appear to be most frequently cited. They are: the wife's employment status, presence of children and satisfaction. Although other factors might have some effect on the participation in and perception of activities, for reasons of parsimony these three factors have been chosen for further analysis. Furthermore, this paper focuses on propositions that compare complementarity and substitutability behavioral patterns between spouses. These propositions also investigate joint husband/wife involvement in discretionary activities.

Among married couples, the activities of one spouse affects the activities of the other. The inclusion of spousal activities should produce richer implications than those obtained in past studies that analyzed individuals' interdependence of activities. Further, only married couples have been included in this paper. While other forms of relationships exist between couples, there is a wide variance in the nature of these relationships which would, in turn, make it difficult to predict the effect of activities on each other.

Relevance

For many years now, economists have developed models linking consumption of time and money and treated them as interchangeable. While the bulk of consumer researchers (and marketers) have restricted their efforts to the study of consumption of products (and more recently services), with the increasing value of time it is essential that studies on time usage be placed on an equal footing. Knowing how consumers use their time (choosing one activity over another) should provide insights to those who study purchases of products and services.

Further, as more and more women join the work force, the time usage of women becomes an important area of study. The propositions developed here include the perceptions of women as well as the relationship between time-usage patterns of both spouses. The relationship between time usage of both spouses can be used to better predict the activities that are jointly

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performed by husband and wife. Thus, a better understanding of family time usage could be obtained.

As a practical consumer behavior issue, investigating the consumption of time from a complementarity and substitutability perspective offers useful information for firms that are interested in formulating advertising, distribution, and diversification strategies. For example, should a firm that manufactures tennis equipment discover that its products are used by consumers in conjunction with health club memberships (complementarity relationship), the firm might want to advertise its products in publications that are read by individuals who are members of health clubs. Secondly, the same firm may find it most effective to ensure that its products are offered in stores that are located within a reasonable distance from health clubs. Finally, top management of this company may want to give health clubs consideration in terms of future diversification.

WIFE'S EMPLOYMENT STATUS

While nearly one-third of the American population now reside in single-head households, the majority of people still live in a "traditional" family unit (i.e., husband and wife). For this reason we have chosen to focus on married households. The decision to allocate discretionary time in married households is likely to be fraught with many competing demands (or constraints).

Since women's participation in the labor force has increased from 39.3% to 46.4% during 1965-1975 (Blau 1984), and is over 50% today, it is easy to justify investigating the effects that the wife's work status has on how she perceives numerous activities and how she distributes her time. For example, a wife who is not employed outside the home may feel she has time to participate in both early-evening aerobic exercises and Wednesday night volleyball (complement relationship). Another wife who is employed outside the home may feel she has only enough time to participate in one of these activities due to limited time available for discretionary involvement (substitute relationship). Hill and Juster (1985) identify work status as one "constraint" factor that can influence time allocation.

Previous studies have found significant differences in behavior patterns between working and nonworking wives which may be a function of their different perceptions regarding discretionary activities. For example, newly employed wives appear to spend fewer hours on household production activities (c.f., Gauger and Walker 1980), fewer hours on social and recreational activities (c.f., Nickols and Fox 1983), and fewer hours with their spouses in joint activities and leisure pursuits (c.f., Jorgenson 1977). The extra money she brings in may also make some types of family activities more available to her and her family (Jorgenson 1977).

The wife's employment status has been found to influence the mix of activities for both spouses much more so than husband's employment status (Sekaran 1983). In traditional marriages the employment of a wife impedes her from doing household activities and children-related activities that are traditionally identified with the wife-mother position. Further, the husband begins to feel less adequate as a breadwinner and is less satisfied. Changes in the husband's employment status, e.g., from full-time to part-time, has no effect on the husband's activities that are traditionally the wife's responsibility. Therefore, the decision has been made to discuss the wife's employment level rather than the husband's employment level.

Furthermore, based on Gover's (1963) findings, dissimilarities in individuals' perceptions of activities, i.e., their relative complementarity (or substitutability), should be more pronounced in the case of families with lower socio-economic status. Men and women in lower socio-economic status families are more comfortable in traditional marriages where the wife "looks after the family" and the husband often spends time "out with the boys." The employment of the wife is likely to cause serious disruption to marital life due to such pronounced changes in activities of the husband and the wife (c.f., Staines, Pottick and Fudge 1986).

In conclusion, work status of the wife and socio-economic background have been known to influence participation in activities. As discussed earlier, Holbrook and Lehmann (1981) view participation in activities as a reflection of one's perception of activities. Thus, we postulate that perception of activities should be influenced by the work status of the wife and the socio-economic status of the family. Therefore, the following proposition is offered:

- P1: The difference in a working wife and a nonworking wife's perceptions of daily activities is reflected in the degree of complementarity and substitutability between activities for both husbands and wives. These dissimilarities will be more pronounced in families with lower socio-economic backgrounds.

NUMBER OF CHILDREN

The presence of children in a family alters the activity patterns of both husbands and wives from their childless state. In particular, young children require more parent-time, leaving the parents with less time for other activities. The birth of a child (another example of Hill and Juster's 1985 "constraint" factors) has been found in a wide range of studies to have a negative impact upon most marriages (c.f., Russell 1974).

The mix of activities can be expected to be different for spouses with children as compared to childless spouses. Furthermore, their perception of the degree of complementarity (or substitutability) for child-related (helping child read) and non-child-related activities (the amount of time the father spends on weekends camping with his friends) may be different. The amount of time allocated to some activities might be more, while the amount allocated to others might be quite less.

Kelley (1980) found that having pre-school children increased family-centered activities such as going to the swimming pool and decreased individual-centered activities such as golf or tennis. Children influence vacation destination decisions substantially (Crompton 1981). Further, childless spouses were likely to spend more time on work-related activities (compared to spouses with children). Additionally, the husband and wife may spend differing levels of time on children-related activities. The amount of time that spouses with children spend with each other is generally less than the time childless spouses spend together.

As children grow older, it is suggested that less parental-time is required for children-related activities. Further, older children might be able to help look after their younger siblings. Partial support for these beliefs is provided by a number of studies that found a U-shaped

relationship between marital quality over stages of the family life cycle (see Spanier and Lewis 1980 for a review). In summary, the presence of children is considered to strongly influence how parents allocate their time to activities which reflects the parents' perceptions. Their involvement in activities by themselves and with one another (husband and wife) leads to the following proposition:

- P2: Husbands and wives with children will have different perceptions regarding the complementarity and substitutability of activities than childless spouses. Further, it is expected that such divergence will increase with the number of children living at home and decrease with the age of the oldest child.

SATISFACTION

The relationship between an individual's perceptions of activities and the individuals' life satisfaction is bi-directional. Individual's perceptions of activities influences whether or not they participate in these activities by themselves or with their spouses. Involvement in these activities results in different degrees of satisfaction depending on how positive the experiences are. The levels of satisfaction derived from each of the activities, in turn, influence the individual's perceptions of these activities.

Satisfaction in different realms is affected by participation in work-related, family-related, and leisure-related activities. Household activities fall under the family-related category. Work-related activities were found to influence both job satisfaction and overall life satisfaction (Sekaran 1983). However, non-work-related activities were found to have a greater overall impact on life satisfaction. Compared to joint spousal participation, individual involvement in discretionary activities is negatively associated to marital satisfaction. Joint and parallel leisure activities were positively related to marital satisfaction (Orthner 1975). The different types of leisure activities indulged in, by one individual or jointly with another individual, have also been shown to produce different satisfaction levels (Holman and Epperson 1984).

Thus, satisfaction can be directly tied to the mix of activities indulged in by an individual or a family. If this mix changes, the calculated complementarity and substitutability of activities will change, as will the level of satisfaction. Thus, satisfaction and the calculated complementarity and substitutability of activities are related. Satisfaction has been measured in the areas of life, marriage and job. We prefer to treat the term satisfaction in the proposition statement as a composite measure whose components include all aspects of satisfaction.

When spouses do things together, the level of marital satisfaction has been found to increase (c.f., Spanier and Lewis 1980). When activities of spouses are different, the calculated complementarity (and substitutability) of activities will be different for the husband and the wife. Thus, the greater the difference in the mix of activities of husband and wife, the lower the satisfaction and greater the difference in calculated complementarity (and substitutability), which leads to the following proposition:

- P3: The differences in life satisfaction are related to differences in perceptions of discretionary activities. Lower levels of satisfaction are expected to be related to increased differences in the respondent and the spouse's perceptions.

MEASUREMENT SUGGESTIONS AND CONCLUSIONS

Both time-diaries, which request individuals to indicate how they allocated their time for a particular day (Walker and Woods 1976), and recall methods (Holbrook and Lehmann 1981), which require individuals to estimate approximately how many times they have participated in an activity during a given time period such as a year, have been used to collect time related information. Weeks, Umesh, and Wong (1986) compared the two approaches and found the diary method produces less complementarity relationships than does the recall method. They argued that finding fewer significant complement (or substitute) relationships with a time-diary may have been due to having higher variances. The week chosen for maintaining the diary may deviate from the normal week for some individuals, and this will increase the variance of the estimates. The recall method requires individuals to identify those activities they are most often involved in during a specific time for a typical weekday and weekend day. The gains from the improved variance more than offset the loss from people recalling incorrectly (at least based on their results). In view of these findings, this paper recommends using the recall method to obtain time usage information.

Consumer researchers have classified individuals based on the activities in which they participate, which has resulted in unique lifestyle profiles. For instance, YUPPIES could be characterized by a certain broad mix of activities that they choose in which to indulge. The focus of this paper is on the relationship between activities; a group with a particular lifestyle might perceive certain activities as strong substitutes, other activities as mild complements, etc. As the set of activities indulged in as well as the amount of time spent on each activity reflects the degree of complementarity and substitutability among each pair of activities, it becomes relevant to study the factors that influence one's time use. By knowing the influence of these factors, it may be possible to classify and segment individuals and families into meaningful groupings.

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The Fortunate Few: Production As Consumption¹

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Abstract

Integrating notions of involvement and work gratification this paper explores the experiences of craftsmen deeply involved in their occupations. A model of production as consumption is proposed in which the craftsman consumes both inputs and outputs in the process of production. Depth interviews explore with informants the satisfactions they receive from their work and from the products of their work. These informants and others like them are referred to as the "fortunate few" because of the intrinsic rewards they find in the processes and products of their production. The authors recognize that this label is value laden.

Introduction

A guy who drives a cab or works in an office works more than I do. I have time to practice my clarinet, see films, go out to dinner and see people. And my work doesn't have the sense of labor about it.

But if I worked at a different job, I couldn't wait until I got home to write. I enjoy it. It's like being paid to play baseball or something. It's like I'm on a constant vacation....

I'm being paid to do what I like. And that is essentially to write and occasionally perform. I do have trouble with my nonwork time.....

Woody Allen

The world will never be happy until all men have the souls of artists — I mean when they take pleasure in their jobs.

Auguste Rodin

For many people their job is a "necessary evil" for which they draw a paycheck so that they can purchase the necessities and pleasures of life. Marx describes production in a capitalist economy as essentially alienating to workers in that they neither control the means nor the products of their labor and feel no real personal investment in their products or in the processes by which they are derived. In this lifestyle people work primarily for extrinsic rewards; intrinsic rewards are achieved through non-work and leisure activities. Sociologists (Applebaum, 1984; Braudel 1979) have noted the demarcation which differentiates production

from consumption, both in terms of activities and times for their performance. We refer to this lifestyle as production *for* consumption.

For some people, however, intrinsic rewards are gained through the process of their work. For them work is not inevitable drudgery but is instead quite enjoyable and fulfilling. Mills (1951) describes an idealized model of work gratification, which he calls craftsmanship, as one in which a person engages in a craft not only for the exchange value of the goods and services produced but more importantly for intrinsic rewards it provides. Work for its own sake and the experiential aspects (Holbrook and Hirschman 1982) of the production process are the life of these fortunate few. We refer to this lifestyle as production *as* consumption.

This paper explores work as experienced by those who are deeply involved in their labors and who derive rewards beyond the economic from their work. Consumption during the process of production is examined. Ideas, energy, tools, raw materials and other chosen media are consumed as people create products and services with exchange value. And, in addition to producing for public consumption (exchange), it appears that deeply involved workers, or craftsmen, also engage in a sort of personal consumption of their own products as they derive meaning, personal growth, and enjoyment from the process of production.

Conceptual Framework

In describing the conditions of modern work Mills (1951) suggests that in an urban society dependent employees are alienated from both the product and processes of work. Although dependent occupations do vary in the extent of initiative they allow, in almost any job employees sell a degree of independence. Working life is within the control of others. The types of employees' skills that are used and the areas in which employees may exercise independent decisions are subject to management by others. Employees receive wages to compensate them for their efforts. They then spend their earnings purchasing an assortment of goods and services. This notion implies that employees work in order that they may consume.

In dramatic contrast, the craftsmen of an earlier era, including persons that Firat (1987) identifies as engaging in productive consumption activities, and perhaps the entrepreneurs, artists and scientists of today, are independent, working for themselves. Their independence gives them the freedom and the responsibility to direct their own work. Intrinsic motivation is presumably high for such people and the work experience takes on personal meaning. As these "fortunate few" develop and refine their skills in their chosen areas the ability to create products and services of value to others is secondary to the opportunity for self-expression and intrinsic reward. The model of craftsmanship is often referred to in discussions of worker gratification. This model is described here as a means of understanding the intrinsic rewards experienced by modern-day craftsmen, entrepreneurs, and workers deeply involved in their occupations.

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The Model of Craftsmanship: According to Mills (1951) the craftsman has no ulterior motives for working; the product and the process of its creation are all important. Pleasure is derived from the work itself. There is an "inner relation" between the craftsman and the thing made which drives the will-to-work. Other motives — such as money or reputation — are secondary. But, as Csikszentmihalyi (1975) suggests, both subjectively valued experience and socially valued accomplishments are likely to result from intense and voluntary investments of psychic energy. Thus, though the economic and social rewards may be secondary to the craftsman, they may result concomitantly with the intrinsic rewards.

In work-as-craftsmanship there is a psychological tie between the product and the producer. The craftsman has an image of the completed product, understanding the meaning of personal efforts and skills in terms of that finished product. The details of daily work are meaningful because they are not detached in the craftsman's mind from the product of the work. Satisfaction with the end result infuses the activities instrumental for achieving it with enjoyment. Mills (1951) suggests that in this way the work itself is meaningful to the craftsman. Personal satisfaction is achieved by garnering materials, overcoming mechanical drudgery, solving other processual problems, and emerging from the production process with a feeling of accomplishment.

The craftsman is in control of his/her own actions. The craftsman is responsible for the process and the end product, determining the shape of the work to be done, the activities required, and the outcome, solving problems encountered during the process. The sphere of independent action for the craftsman is large. Personal choice and initiative are paramount for the craftsman who works for the craft first. In his research on perceived choice Csikszentmihalyi (1975) hypothesized that when a person chooses to become involved in an activity, that personal initiative motivates him/her to sustain concentration on that activity long enough to bring it to fruition. The intense concentration required for complex achievement appears to be most readily available when given willingly.

The craftsman is able to learn from his/her work and to use and develop personal capacities and skills through that work. Self-development is the cumulative result of devotion to and practice of one's skills. Through such learning, not only are skills improved, but the craftsman's very nature is developed. As Csikszentmihalyi (1975) proposed, worthwhile accomplishments are based on skill and discipline, and these require extensive commitment of attention to learn and to apply. In this sense the craftsman establishes an identity through the work in much the same way that Belk hypothesizes that consumers identify with their possessions (Belk, 1987).

For the craftsman there is no split of work and play, or work and culture. In treatises that dichotomize work and play, work is supposed to be an activity performed to create economic value. Work, in a sociocultural context consists of "all the activities whose output can be measured explicitly or implicitly, in terms of marketable goods and services" (G. Rosegger as cited in Bartell and Bartell 1985). Conversely, play is an activity exercised for its own sake to gratify the actor. As Mills (1951) comments, play is something you do to be happily occupied. But *work* occupies the craftsman happily. Thus, although work is serious for the

craftsman, it is at the same time play. Personal expression occurs at the same time and in the same act as the creation of value. Consumption and production are blended in the same act.

The craftsman's work is the mainspring of the only life he/she knows. The values and qualities developed and employed during working time are brought to non-working hours. Leisure is apt to occur in intermittent periods as necessary for rest, reflection and rekindling of individuality in the craftsman's work. The craftsman's way of livelihood determines and infuses an entire mode of living. (Mills, 1951, p. 220-224).

The essential features of this model of craftsmanship appear to be:

1. Freedom and self-control over the process and its outcome;
2. Personal meaning derived from the production process; and
3. Intrinsic motivation including the opportunity for self- development and growth.

Involvement With Work: Craftsmanship as an ethic certainly goes beyond those occupations typically classified as crafts. One overriding characteristic of most craftsmen seems to be their deep involvement in their crafts. To understand the experiences of those deeply involved in their work some general notions from research on involvement are useful.

The three factors identified above are very similar to those characteristics identified in a recent study of the subjective leisure experience reported in the consumer behavior literature (Unger and Kernan 1983). Unger and Kernan suggest that leisure provides a high level of perceived freedom for the actor, involves intentional involvement, and results in intrinsic satisfaction. Relatedly, Scammon (1987) discussed the factors motivating commitment that ultimately turned a hobby into an avocation. Her introspection revealed the importance of focused behavior, side bets, and affective attachment to her deep involvement.

Bloch and Bruce (1984) addressed the notion of product involvement calling it "an abiding interest in, and attachment to, a product class which is independent of purchase or other situational factors." They proposed a model of "leisure-based enduring involvement" suggesting that product involvement may be related to *leisure* activities (Bloch and Bruce, 1984, p. 200). Bloch and Bruce (1984) dubbed such involvement "product enthusiasm" in applying it to hobbies. They suggest that it is the product meaning or the connection between the product and the individual that distinguishes the enthusiast. Stebbins (1977) describes a hobby as "a specialized pursuit *beyond one's occupation* (emphasis added) that one finds particularly interesting and enjoys doing."

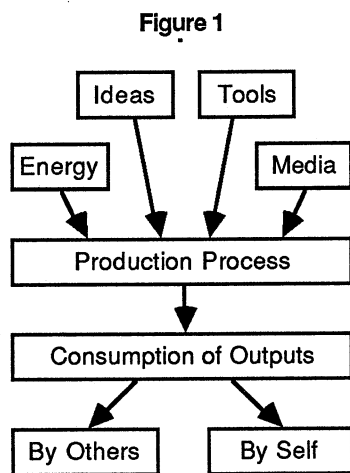
Since work is an important sphere of life, it is likely that similar product attachments may develop for those people who are deeply involved in their work. Houston and Rothschild (1978) suggest that enduring involvement with a product derives from the product's relatedness to a consumer's needs, values, or self-concept. For those people who are deeply involved in their occupations, product involvement may occur for work-related products. As with the role of products in

leisure behavior however, there are likely to be varying levels of connectedness between a product and a particular work activity (Bloch and Bruce 1984). A product may be the central element in the craft as clay or a potter's wheel are to a potter's work. A product may also play a secondary role as a piece of functional or supporting equipment. Bloch and Bruce (1984) explicitly recognize that product involvement may result from role-related demands placed on the consumer. With a craftsman, this involvement may relate to a desire to perfect occupational role performance. Csikszentmihalyi and Rochberg-Halton (1981) in their studies of the subjective meaning of things, relate instances in which workers report a high level of attachment to and involvement with the tools of their trade.

Deci (1975) proposed that an activity can provide external rewards or be satisfying in and of itself. It has been suggested that with respect to leisure activities, intrinsic satisfactions are primary motivators of highly involved recreational specialists, while lesser involvement is associated with the pursuit of extrinsic rewards. Intrinsic rewards identified in the leisure context include such things as companionship, power, intimacy and self-actualization. The rewards obtained during personal consumption by people deeply involved in their work may parallel these sorts of satisfaction.

A Model of Production As Consumption:

Returning to the notion of production as consumption, a process model can now be proposed. As pictured in Figure 1, the craftsman is viewed as selecting and combining various inputs destined to become finished products which will have value for both public and private consumption.



Hyde (1979) suggests that "an essential portion of any artist's labor is not creation so much as invocation. Part of the work cannot be made, it must be received..." He suggests that certain essential but intangible ingredients in the creative process, including ideas and energy, are received as gifts from without and consumed and transformed during the process of production only to be given again. The new gift, or finished product, bears the added value and meaning which come from the artist's or craftsman's personal creative investment.

Tools and materials or media are also chosen and consumed by the craftsman. Lucie-Smith (1981) comments that "every consideration of craft, before it examines what is made, or the processes used, must look

first at the materials and implements employed"(p. 19). The selection of materials and tools and the implementation of ideas appear to infuse the production process with personal meaning for the craftsman.

Certain intrinsic rewards can be associated with the actual process or activities of production. The rewards from self-controlled activity include the opportunity for growth and self-development that come through the practice of personal skills. Another important benefit from work-as-craftsmanship may be the achievement of "flow," described by Csikszentmihalyi (1975) as "the holistic sensation that people feel when they act with total involvement" (p. 56). According to Csikszentmihalyi, flow is achieved during the interaction of challenges posed by the situation and skills possessed by the actor. The craftsman who has honed skills through long hours of apprenticeship and extended study finds satisfaction in the production process. In these ways, work-as-craftsmanship is seen as consumption — consumption of personal skills and energy, consumption of inputs of materials and tools, as well as experiential consumption of the process and final outputs of production by the producer.

An obvious final result of the production process is the creation of some product or service with the intent that it be consumed by somebody. What may be less obvious but no less real is the way in which the product is also consumed by its producer. Some objects, most notably but not exclusively works of art or fine craftsmanship, are consumed primarily in an aesthetic, experiential way. Csikszentmihalyi and Rochberg-Halton (1981) describe the aesthetic experience as an appreciation of an object for its intrinsic qualities. Probably no one understands and appreciates the intrinsic value of a product as well as the person responsible for its existence. The highly involved producer is also, in many cases, the first and most ardent consumer of the thing produced.

Within the framework laid by the above discussion and depicted in Figure 1 a set of dimensions of the production-as-consumption experience are identified. These dimensions include:

1. Consumption of "inputs", e.g., tools, materials, ideas, and energy.
2. Consumption of "outputs."
3. Satisfaction from the production process.
4. Relation of involvement in work to other aspects of life, e.g., non-work interests.

An Exploratory Inquiry

In an attempt to provide some empirical insights into the nature of the production-as-consumption phenomenon, depth interviews were conducted with a number of informants who were identified as loving or being passionately involved in their work. Among those interviewed were a potter, a horse trainer, a head and neck surgeon, and a jazz disc jockey. Lincoln and Guba (1985) describe this type of sample, that is a sample chosen based on informational rather than statistical considerations, as a "purposive" sample. According to Patton (1980, p. 105) purposive samples are useful in "provid[ing]...information about unusual

cases that may be particularly troublesome or enlightening."

Upon completion of each interview, the researcher wrote extensive field notes recording the verbal transactions as well as non-verbal communications and contextual information about the setting and the interview itself. These transcribed interviews were then analyzed for thematic content and, where possible, interpreted symbolically as described by Levy (1981, 1986). Pseudonyms have been used in this paper to protect the anonymity of the informants.

Interpretative Look at the Data

Drawing from the factors emphasized in Mill's model (1951), interviews probed the areas of perceived freedom and self-control, personal meaning derived from the production process, and intrinsic motivation. Several themes expanding on these notions developed out of the encounters.

Consumption of Inputs: During several interviews, the informants talked about the tools they used in their work. Comments ranged from the attainment of mechanical proficiency with high-technology equipment to deep emotional attachment to "special" implements. Dave, a potter, talked about certain tools as "old friends," but noted that for him to get hung up on tools would be distracting. Even though he had dozens of tools in his studio, some tools had very special meaning. When he couldn't find one particular tool that he "needed" for a week-end pottery show he was visibly distressed. As with some of his tools, Dave also ascribes human qualities to his clay, describing it alternately as "very sensuous", having "a meaty feel to it", and "fleshy." For special jobs he insists on preparing the clay himself in order to "know what the clay feels like...what it wants to do...and what it will or won't do."

A disc jockey, Brian, professes no attachment to the equipment he works with but feels that mastering the equipment is important because it frees him to be creative and self-expressive in his programming and in communicating with his audience. He reveres his records very highly. In response to a comment that he took good care of his records he said, "Oh yeah! I love records...I feel like sort of a librarian." During the show (this part of the interview was conducted while Brian's program was airing) he pointed out certain records that seemed to have special significance. One was by a band that his father had played with in the 1930s.

Another important input to the production process, aside from tools and media, is information. Larry, a surgeon, recalled that while teaching surgical skills to residents he was forced to know all the cutting edge research in order to keep ahead of them: "You had to read the journal the morning it came across your desk, and then be able to critique it for the residents that afternoon; you had to be able to tell them when what's been written is so much horseshit."

One interesting comment came from the horse trainer, Cliff, who said he needs nothing more than "his mind and a rope; any old rope will do." It was obvious that with his mind this man could think through any situation and come up with a solution. In talking about where these solutions came from, he said he owed a lot to the people he learned from: "whether they know it or not, those people have a hand in what I'm doing in a round about way even if they never see the horse."

Contemplating the inputs consumed by these diverse informants, one similarity emerged. The tradition in which they worked was important to all of them. Whether via cowboy culture, the medical profession, or a particular artistic community, in each case a flow of ideas, a "right" approach to their work, a sense of quality and peer acceptance, and other such codes, were received by them as part and parcel of their chosen sub-cultures. It seems that these informants have life patterns similar to the consumption patterns described by Firat (1987) in which products attain meaning from their consumption context and at the same time give meaning to those contexts.

Consumption of Outputs: In addition to consumption by the public of their finished products or services, our informants talked about what they got from the products themselves. For instance, as Brian airs his jazz program for public consumption, he also listens very purposefully to the music for his own reasons. He reports that intensive listening helps him hone his own skills as a musician giving him insights into techniques used by others so that he can better translate his musical thoughts into his own performances. He also claims to select the music based on the mood he desires to create for himself.

For Dave, sharing his pottery with other artists is important. He enjoys seeing his peers on the art show circuit and says they notice when he has something new to sell, or when he's altered an existing product. He looks forward to the appreciation of his work by others whom he respects. His finished work acts as a message to his peers of his accomplishments as an artist. In another context he talked about the "inside, creative, interpretive, instinctive part" of his work saying that when he sells a fine piece, the customer is paying for that part of him which it contains.

For both the surgeon and the horse trainer an important way in which they personally consume their own products or services involves seeing their "students" make conceptual breakthroughs or finally overcome previous mental blocks. The surgeon commented that he got immense satisfaction when, after long suffering with some "knothead resident" there was a breakthrough. In a similar discussion of breakthroughs in training, the horse trainer said that he doesn't have any problem students: the "timing or the situation may not be right but that doesn't mean the horse has a problem." He went on to explain that "you can be the most impatient SOB in the world but you still have to wait [until you and the horse can] get together," implying that a horse too has a will and a mind that must be respected if the trainer is to enjoy the result of his labors.

Personal Fulfilment from the Production Process. Production as consumption provides many sources of fulfilment for those who experience it. One of the most frequently reported and highly stressed by informants is the freedom and autonomy they have to do what they want to do in the way they want to do it. This is not to say that the informants do not recognize their responsibilities to their employers, clients, or audiences, but rather that they have a very high degree of control over both product and process.

Brian is a good example. He appreciates the fact that he is accountable to no one but himself for the music he plays. Although he is acutely aware of his audience and occasionally honors requests for special pieces, he does all his own programming. He feels no kinship whatsoever with pop radio disc jockeys who

must tow the line of professional programmers interested primarily in the commercial value of their selections.

Cliff feels similarly and claims that "there are few people qualified to tell me what to do." He doesn't mind suggestions from horse owners but demands the freedom to use his own techniques in his own way and in his own time. Customers who are not content to give him that freedom are "weeded out right away." Asked about the prospect of being someone else's employee he responded, "There are a couple of guys I would work for just for my keep and to be able to learn from them," but says he wouldn't be a good employee unless he was constantly learning and had tremendous respect for his employer.

Not only are all the informants relatively free from the controlling influences of bosses or rigid policies, they are also remarkably free of the exigencies of money. The informants unanimously remarked that they either worked for significantly less money than they could earn at other jobs or that they would continue doing what they do even if the monetary rewards were reduced. Brian gave up a lucrative opportunity to take over a family motorcycle franchise in order to work in jazz music. His first job as a jazz disc jockey was strictly volunteer work for a local community radio station. His current job with a PBS station pays barely \$1000 a month. Although he would like to be making more, he adjusts to the low pay by keeping his consumption in other areas, e.g., house, car, and lifestyle, to a minimum.

Cliff echoes these sentiments: "I wouldn't know what to do if I retired; besides, you'll never make enough money to retire." Although he refuses to discount his rates for training, he claims that the money isn't the issue. He said, "If the money wasn't there it probably wouldn't change anything," implying that he would continue to train and ride horses even if only for himself and for the horses. For Cliff the customer and the fee are the least important elements in his business.

In stark contrast to the informants for whom production is a consumption activity, consider the case of Joe, a lab technician. When asked to tell about his work he said, "You know, work is work. It's okay. Basically it's a way to make money for the things I like to do...You know, biking, woodworking, gardening...." When asked if he enjoyed his work he spoke immediately to the issue of control: "It all depends on the supervisor. If you've got a good supervisor it's okay; right now my supervisor and I don't get along too well...just different personalities I guess." Joe controls neither the product (which he describes as "just data") nor the process ("We are required to follow certain procedures."), nor the circumstances of his work ("We used to be right there in the hospital; we could talk to the physicians and relate to them. Now, of course, they've moved us out there [to the research park] and we're more isolated.") Joe said that the ideal situation would be to be his own boss. When asked if there was any chance of that ever happening he just shook his head slowly and pursed his lips in a gesture indicating "no."

Whereas the actuality or the feeling of autonomy are important elements of production as consumption, perhaps even more important are the consumption experiences which such circumstances facilitate. Cliff is free to allocate his time and energy according to the needs of the individual animal, enhancing his ability to develop real communication between him and the horse,

a relationship that approximates parental fondness in its closeness and intensity. Brian is free to choose music that best fits his personal listening needs and, thereby, to listen intensively and purposefully while he broadcasts. For Dave the very action of squeezing the clay and seeing it transformed at his touch from an amorphous mass to an object of beauty bearing the stamp of his own creativity is an absorbing and intrinsically rewarding experience.

Lifestyle: Perhaps the one thing that most obviously distinguishes the informants from those who engage in production for consumption is the way in which their jobs are central to and even definitional of an entire way of life. Brian lives jazz. He performs it, practices it, and teaches it at the university. His social life revolves around jazz musicians and listeners. His most important personal possessions are his instruments, his records and his stereo equipment. Even his home decor reflects his preoccupation with jazz music, one entire wall being covered with photographs of musicians — sort of a pictorial museum of his affiliation with his music.

Cliff's involvement with horses goes far beyond the level of occupation and worktime hours. In his spare time he enjoys drawing horses, cowboys, and other western motifs. He plays guitar, sings western songs and recites cowboy poetry. He also spends hours tooling leather, but confines his leather work to equipment which is useful in his occupation. He says these are "sort of an outlet, something else I like to do, but they all deal with the same things I do [at work]."

Dave does engage in activities which are not obviously related to his craft, but they are all things which he feels are harmonious with and contributory to his work. Such activities as going to the mountains to cut and collect firewood are enjoyed partly for the intrinsic enjoyment they provide and partly for the "creative boost" and "inspiration" that he derives from them for his work.

Larry's lifestyle can probably be best described in his own words, "pushing it to the limit." He speaks of the thrill of employing "cutting edge" surgical techniques or of encountering life-threatening emergencies and compares it with the exhilaration that comes from his alternate passion, flying his own airplane. He especially enjoys the thrill of flying in inclement weather and speaks excitedly about his heightened awareness of essential gauges and about studying the clouds "for a hole to escape through." The things he emphasizes in his life experience are precisely those things that involve the greatest novelty and risk.

Conclusion

Production as consumption defines the life pattern of a number of individuals for whom the work experience is, as Woody Allen said, "a constant vacation" (Geist 1987, p. 40). More than just a paycheck, work is a process of consumption which provides, in all its stages, vital intrinsic rewards for the doer. It is not just a means to an end but an end in itself. Such work, though rewarding, is also demanding. The "fortunate few" seem to feel the price is well paid and can frequently be heard to say, like the horse trainer, "I can't imagine ever doing anything else."

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The Resolution of Conflict In Joint Purchase Decisions by Husbands and Wives: A Review and Empirical Test

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Abstract

This paper critiques existing literature on interpersonal conflict resolution. It then advances the literature by examining the behaviors used by husbands and wives in resolving joint purchase conflicts. A nationwide sample of 284 married individuals is employed. Four factors seem to underlie reported conflict management behaviors: the use of punishments, threats, authority, and negative emotion; the use of positive emotion and subtle manipulation; the use of withdrawal and egocentrism; and the use of persuasion and reason.

Introduction

Although the consumer decision making literature has increasingly begun to recognize the importance of the family (or household) as a unit of analysis, until recently published knowledge of consumer decision making dealt almost exclusively with the buying decisions of individuals. Those investigations which have dealt with family purchase decisions have tended to focus largely on the *outcomes* of the decision process -- i.e., who actually decided or "who won." Recently, writers have begun to address the need to more completely understand the intricacies of the family decision making *process*. Thus, the focus is beginning to shift from "who decides" to just how purchase decisions are made within the family (Davis 1976).

Within this sphere, the topic of intra-family conflict regarding a purchase remains a relatively neglected area of inquiry. "Conflict" here is equated with Kelly and Egan's (1969, p. 251) "divergence," meaning "disagreement, explicit or implicit, between husband and wife on the rationale or outcome of a decision." Although a scale has been developed to measure spousal conflict arousal (Seymour and Lessne 1984), little has been done to study its resolution. The existing literature here has been largely non-empirical, and among the meager number of empirical investigations, there exists much disagreement over the nature of conflict management strategies. A simplifying structure is needed to integrate the results of previous work, and to suggest more standardized terminology for future investigations.

Literature Review

A useful method of organizing the conflict management literature has been suggested by the work of David Kipnis (e.g., Kipnis and Schmidt 1983). As Kipnis points out, a major part of the literature on conflict management behaviors is comprised of "deductive" typologies -- i.e., lists of conflict management strategies based only on the author's theoretical bent and/or personal observations. These are distinguished from "inductive" typologies -- i.e., lists of conflict management strategies derived in an empirical setting.

Deductive Classifications of Influence Strategies

Deductive classifications of influence strategies have been proposed by authors in various social science disciplines. Many such listings were developed by social or industrial psychologists to deal with dyadic interactions other than those of husband and wife. Some

of the more well-known deductive typologies include those of French and Raven (1959), Thibaut and Kelly (1959), Blood (1960, 1962), Thomas (1976), and Tedeschi, Schlenker, and Bonoma (1973). Two deductively derived lists of conflict management strategies have been proposed in the family purchasing context: Davis (1973, 1976) and Sheth (1974).

Research Based on Deductive Classification Systems: Several research investigations have employed one or a combination of these deductive typologies. The objective has typically been to examine the relationship between specific independent variables and one's choice among influence strategies. Subjects are usually asked to choose, from a list, the conflict management behaviors they would use in a specific situation. Most of the studies employ individual strategies as the dependent variables; however, two (Perreault and Miles 1978; Spiro 1983) focus on the choice of an influence strategy *mix*, using cluster analysis to determine the mixes. Overall, the results of these studies seem to indicate that one's choice of influence strategy is affected by various personality (Kilmann and Thomas 1975), attitudinal (Baxter and Shepherd 1978; Scanzoni 1978; Spiro 1983), demographic (Granbois 1971; Scanzoni 1978; Sheth and Cosmas 1975; Spiro 1983), and lifestyle (Sheth and Cosmas 1975) variables, as well as by the relationship between the parties involved (Baxter and Shepherd 1978; Kipnis et al. 1976; Michener and Schwertfeger 1972; Perreault and Miles 1978) and the nature of the conflict or decision (Granbois 1971; Scanzoni 1978; Sheth and Cosmas 1975).

Critique of Deductively-Based Typologies and Research: Numerous problems are evident with regard to these deductive typologies and the studies based on them. As several authors (e.g., Kipnis and Schmidt 1983; Kipnis, Schmidt, and Wilkinson 1980) have pointed out, though the typologies often overlap, they fail to agree on either the type or number of conflict management behaviors. Most of the deductive typologies represent purely static listings, with no conception of underlying structure (Sprey 1975). The remaining deductive typologies make untested assumptions that the strategies are organized along particular dimensions (e.g., Davis 1973, 1976; Tedeschi et al. 1973). We do not know which of the proposed dimensions are truly independent from one another, which combination is exhaustive, etc. A related problem (cf. Kipnis and Schmidt 1983) is the tendency of some authors to assume that certain influence tactics are necessarily used under specific conditions. For instance, in the Davis (1973, 1976) model, it is assumed that specific strategies will be used if family members agree about the goal, and other strategies used if they do not. Sheth (1974) is even more specific about the circumstances which would dictate the use of each strategy in his model.

A more serious concern is the construct validity of the deductive typologies. These lists do not match the sets of strategies actually elicited from subjects in an empirical fashion (cf. Kipnis et al. 1980; Kipnis and Schmidt 1983). They tend, on the one hand, to exclude strategies which are actually used (Clark 1979; Cody, McLaughlin, and Jordan 1980; Falbo 1977; Kipnis et al.

1980; Kipnis and Schmidt 1983), and on the other, to include strategies which are apparently not used (Kipnis et al. 1980; Kipnis and Schmidt 1983).

The studies based on these typologies vary widely in methodological rigor. Their self-report techniques are especially prone to social desirability biases, given the topic of personal influence. Some of the studies rely extensively on recall ability (e.g., Sheth and Cosmas 1975); others use hypothetical conflict situations (e.g., Michener and Schwertfeger 1972). Statistical analyses in some of the studies are limited (e.g., Belch, Belch, and Sciglimpaglia 1980) or nonexistent (e.g., Sheth and Cosmas 1975). Student or other convenience samples are frequently used.

Furthermore, though it is worthwhile to investigate parameters related to the choice of influence tactics, this seems premature while we remain in doubt as to the nature of the conflict management strategies themselves. Likewise, it also seems premature to treat influence strategy mixes as the dependent variable, when the elements of which these mixes are constituted are based on deductive reasoning.

Inductive Classifications of Influence Strategies

In a few recent studies, lists of behaviors used in conflict resolution have been empirically derived. None of these studies has examined the tactics used by husbands and wives in resolving a joint purchase conflict, however. This is a significant omission given that conflict management behaviors appear to vary with the relationship of the parties (i.e., husband and wife), and with the nature of the conflict (i.e., a purchase decision).

In general, these inductive studies have had a dual purpose. The first objective has been to empirically identify the behaviors employed in conflict management, and their underlying structure. A second objective has usually been -- as before -- to investigate various parameters which might correlate with one's choice of influence strategies.

Typically in these studies, an initial sample of subjects is asked to indicate the strategy they would use, either in response to a given hypothetical conflict situation (e.g., Clark 1979; Cody et al. 1980) or in a paragraph on "How I get [or got] my way" (e.g., Falbo 1977; Falbo and Peplau 1980; Kipnis, Cohn, and Catalano 1979; Kipnis et al. 1980). The resulting list is then analyzed to determine its underlying factors or dimensions. When multidimensional scaling has been used for this analysis, either the researchers and other "experts" provided the dissimilarity ratings (Falbo 1977; Falbo and Peplau 1980), or a second sample of subjects sorted the strategies (Cody et al. 1980). When factor analysis has been employed, a second group of subjects has rated the strategies according to their own frequency-of-use (Kipnis et al. 1980). A few studies used a set of conflict management behaviors empirically derived in another investigation. These studies extracted frequency-of-use data from a new sample, for factor analysis (Fitzpatrick and Winke 1979; Kipnis et al. 1979, Study 3) or cluster analysis (Kipnis and Schmidt 1983).

Findings of Inductive Studies: Regarding the lists of conflict management behaviors and their underlying structure, even these empirically derived classification systems exhibit quite a bit of divergence from one another. They reveal from two (Cody et al. 1980; Falbo 1977; Falbo and Peplau 1980) to eight (Kipnis et al. 1980) factors or dimensions of conflict management,

with only partial overlap in the underlying structures. With regard to parameters affecting one's choice of strategy, the results support earlier findings that choice of influence tactics varies with the relationship of the parties involved (Falbo and Peplau 1980; Fitzpatrick and Winke 1979), and with the nature of the conflict or goal (Cody et al. 1980; Kipnis et al. 1980; Kipnis and Schmidt 1983). Choice of influence strategy also seems to be related to the actual or perceived relative power in the relationship, and to the actual or expected amount of resistance encountered in the influence attempt (Falbo and Peplau 1980; Kipnis et al. 1979; Kipnis et al. 1980; Kipnis and Schmidt 1983). It also appears that certain personality variables such as Machiavellianism and conformity are related to choice of influence strategy (Falbo 1977), while certain demographic variables, such as age of influencer (Falbo and Peplau 1980) and nationality (Kipnis and Schmidt 1983), are not. Finally, there is conflicting evidence regarding sex differences in choice of conflict management strategies (cf. Falbo and Peplau 1980; Fitzpatrick and Winke 1979; Kipnis et al. 1979; Kipnis et al. 1980).

Critique of Inductive Investigations of Influence Strategies: A major problem with these investigations is that of external validity. In all the studies the dependent variable consists of self-reported, rather than actual, choice of influence tactics, and in a hypothetical rather than a real conflict situation. Second, almost all the studies (except Kipnis et al. 1980) employed student samples. These findings highlight the fact that the influence strategies students say they use in hypothetical conflict situations may be quite different from the strategies actually used by some other population of influencers and/or targets (e.g., husbands and wives) in an actual conflict situation (e.g., divergence over a joint purchase).

Three studies used multidimensional scaling to analyze the lists of strategies. Two of these (Falbo 1977; Falbo and Peplau 1980) used "experts" to provide dissimilarity ratings, so the resulting solutions show how the experts view the underlying structures, not necessarily how the subject population would view them. In the third scaling study (Cody et al. 1980), new subjects sorted the strategies based on similarity. Though a different scaling was done for each of three hypothetical conflict situations, it was decided *a priori* that in all cases a two-dimensional solution would be used. This resulted in a rather odd collection of "dimensions," several of which are difficult to conceptualize as ends on a continuum.

Other problems characterized the factor analytic studies (i.e., Fitzpatrick and Winke 1979; Kipnis et al. 1979; Kipnis et al. 1980). Here, subjects responded to statements of compliance-gaining behavior by estimating how frequently they had used each strategy over a period of several months. Besides the obvious recall problem here, there is also the potential for social desirability biases to be operating. (At least one study, Falbo 1977, found choice of conflict management behaviors to be related to scores on the Marlowe-Crowne social desirability scale.)

These results leave many questions unanswered. Most importantly, the underlying nature of influence strategies is still unclear. As was true of the deductive typologies, there exists definite overlap among the empirically derived lists; yet once again, none of the structures match. Any attempt to summarize the dimensions reported in these studies leads back to

deductive speculation as to which categories are independent from, and which equivalent to, others. Again, studying the relationship between specific variables and one's choice of influence tactics should logically await further knowledge of the tactics involved.

Based on this literature review, the present study sought to address the following empirical question:

What factors underlie the conflict management strategies reported by husbands and wives in resolving joint purchase-related conflicts?

Method

Subjects

Subjects consisted of 284 individuals, living throughout the United States, who were either married (92%) or exclusively involved with another person (8%). (Only one person from any given household was used; see Discussion. The term "exclusively involved" allowed cohabitating and/or engaged individuals to participate in the study, provided they could recall a recent joint purchase disagreement with their "spouse.") The respondents were 56% male and ranged in age from 20 to 77 years with a mean of 43.0 years. The sample was somewhat upscale, with the mean level of education slightly above two years of college, individual income averaging about \$25,000 per year, and 45% in professional or managerial occupations.

Procedure

A mailing list of 2900 randomly selected individuals who had purchased a new car was obtained from R. L. Polk, a nationally syndicated marketing research data supplier. A survey packet containing a cover letter, questionnaire, and postage paid reply envelope was mailed to each of the 2900 potential respondents. The recipient was asked to respond only if he/she was married or exclusively involved with another individual, and could recall a recent joint purchase disagreement with the spouse. This initial mailing produced a total of 214 responses, of which 185 (86%) were useable. Approximately one month after the initial mailing, a follow-up containing another complete survey packet was mailed to all nonrespondents. This mailing produced a total of 170 responses, of which 99 (58%) were useable.

Questionnaire

As noted, there is disagreement -- even among the empirically derived typologies -- as to the number and nature of interpersonal conflict management tactics. Thus, a measure was developed by combining all the previous empirically-derived tactics into one questionnaire. The resulting "strategy rating measure" listed 38 behaviors in a random order (see Table 1). After answering several questions regarding the specific joint purchase on which they and their spouse had disagreed, subjects were asked to indicate the likelihood that they, themselves, had used each of the 38 behaviors in settling this particular conflict. A five-point rating scale was employed (I definitely did NOT use; Unlikely that I used; 50/50 chance that I used; Likely that I used; I definitely DID use).

Results

Nature of the Joint Purchase Disagreement

Subjects reported on a variety of joint purchase disagreements, from the new car mentioned in the cover letter, to furniture, vacations, and major entertainment appliances. The majority of purchases involved large expenditures.

Factor Structure

In order to address the research question, subjects' scores on the strategy rating measure were submitted to a factor analysis using the SPSS-X statistical package. Using the maximum likelihood algorithm, four factors were extracted for the final solution. This decision was based on the "Kaiser" (eigenvalue) criterion, parsimony, and the interpretability of the rotated factors. An oblique rotation ($\Delta=0$) was performed, to more adequately represent what were assumed to be naturally intercorrelated underlying factors. The rotated factor loading (pattern) matrix was examined to see which strategies loaded most heavily on each of the factors. Table 2 presents the conflict management behaviors with loadings greater than .40 on each of the four factors. A brief description of each factor follows.

Factor 1 represents the use of punishments, threats, authority, and negative emotion in dealing with the spouse. Strategies loading most heavily on this factor include refusing to do chores, threatening punishments, behaving angrily, and stating that the spouse has no right to disagree.

Factor 2 depicts the use of positive emotion and subtle manipulation. Loading heavily on this factor are strategies such as putting the spouse in a receptive mood, appealing to the spouse's love and affection, and promising to do something nice in exchange for compliance.

Factor 3 suggests the use of withdrawal and egocentrism. Included here are behaviors such as denying affection, "clamming up," and looking hurt.

Factor 4 involves the use of persuasion and reason. It includes actions in which the respondent uses logic or persistence to convince the spouse to change his point of view.

Discussion and Conclusions

Each of the four factors can be clearly tied to previous work on conflict management. (A table is available from the author showing parallels between the present factors and both inductive and deductively derived conflict management behaviors.) Yet, while these results provide support for many of the conflict management behaviors proposed in the deductive typologies, the underlying structure does not match any of the deductive systems. Notably, neither the Davis (1973, 1976) nor the Sheth (1974) typology received empirical support.

The number of factors is fairly consistent with the results of the inductive studies. For instance, both Falbo (1977) and Falbo and Peplau (1980) presented two-dimensional solutions; the fact that each dimension is bipolar implies that at least four kinds of strategies were being expressed in these studies. Cody et al. (1980) had decided to use two-dimensional solutions *a priori*, and the same dimensions did not emerge across their three

TABLE 1
STRATEGY RATING MEASURE

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1. I kept repeating or arguing my point of view.
 2. I behaved angrily (slammed doors, shouted, etc.)
 3. I pointed out how important it was to me that the other person do it my way.
 4. I reminded him/her of past favors I had done.
 5. I waited until he/she appeared in a receptive mood before asking.
 6. I made the other person believe he/she was doing me a favor.
 7. I tried to understand his/her point of view.
 8. I pretended to agree with him/her, then later pushed my own point of view.
 9. I showed how much his/her stand hurt me by looking unhappy, crying, sulking" etc.
 10. I withdrew affection, acted cold, or ignored the other person.
 11. I made a joke about the disagreement.
 12. I just stated my needs. I told him/her what I wanted.
 13. I promised to do something that would make him/her happy.
 14. I pointed out that I knew more about the matter than he/she did.
 15. I suggested we talk about it, that we discuss our differences and needs.
 16. I simply gave in. I let the other person have his/her way.
 17. I suggested a compromise, in which we'd each give up part of what we wanted and meet in the middle.
 18. I criticized his/her point of view as being silly, naive, etc.
 19. I refused to do something expected of me (e.g., chores).
 20. I got angry and demanded that he/she give in.
 21. I tried to convince or persuade the other person that my way was best.
 22. I made the other person unhappy by doing things he/she doesn't like.
 23. I was especially pleasant, helpful, or charming before bringing up the subject.
 24. I pointed out that he/she had no right to disagree with me on this issue.
 25. I appealed to the other person's love and affection for me.
 26. I exaggerated the importance of what I wanted him/her to do.
 27. I named a specific punishment that I'd inflict if the other person didn't comply (like not speaking to him/her).
 28. I pleaded or begged him/her to see it my way.
 29. I came up with a totally new solution that might satisfy both of us at once.
 30. I distorted or misrepresented the reasons he/she should do what I wanted.
 31. I clammed up and refused to discuss the issue.
 32. I made the other person think my way was his/her idea.
 33. I offered an exchange (e.g., if you do this for me, I'll do something for you).
 34. I just went ahead and did it my way.
 35. I dropped subtle hints. I didn't mention it directly at first.
 36. I made the other person feel guilty.
 37. I simply explained the reasons for my request.
 38. I obtained the support of others to back up my request.
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Note: This list was culled from the six inductive studies of conflict management (i.e., Cody et al. 1980; Falbo 1977; Falbo and Peplau 1980; Fitzpatrick and Winke 1979; Kipnis et al. 1979; Kipnis et al. 1980).

experimental situations. Thus, they eventually suggested five separate types of strategies as potentially important (direct/rational, exchange, manipulation, threat, and expertise). And although Kipnis et al. (1979) found three factors to emerge from their factor analysis (strong, weak, and rational), Fitzpatrick and Winke (1979), using a similar methodology, reported five (manipulation, non-negotiation, emotional appeal, personal rejection, and empathic understanding). Only Kipnis et al. (1980) reported a much larger number of factors (i.e., eight: assertiveness, ingratiation, rationality, sanctions, exchange of benefits, upward appeal, blocking, and coalitions), and some of these may be peculiar to the organizational context in which conflict resolution was studied.

The nature of the factors also seems reasonable in light of the inductive studies. For example, with the exception of "emotional appeal," each of the factors in the Fitzpatrick and Winke (1979) study has an approximate parallel in the present results. Similarly, with the exception of the use of withdrawal and

egocentrism, each of the factors derived in the present study has a parallel in the results of Kipnis et al. (1979). There is also much similarity between the present factors and the first four of those derived in Kipnis et al. (1980).

Several limitations of the present study should be noted. First, the generalizability of the results is limited by the upscale nature of the sample. Second, the conclusions are still based on self-report, recall data, though the reliance on recall was greatly reduced over previous studies (see below). There is also the possibility that the results were affected by the need to offer socially desirable responses. Relating to the factor analysis, it should be noted that the final solution accounted for only 35% of the total variance in the conflict resolution strategies. This may have resulted from error in the measurement process, the skewed nature of the sample, the possibility that entire factors were omitted from the strategy rating measure, or the chance that a parsimonious factor structure simply does not exist. Finally, the response rate was low; useable questionnaires were returned by just under 10% of the

TABLE 2
BEHAVIORS LOADING MOST HEAVILY ON EACH
FACTOR

Loading	Behavior (As numbered in Table 1)
Factor 1: Use of punishments, threats, authority, and negative emotion	
.868	#19
.716	#27
.700	#22
.657	#20
.534	#24
.427	#28
Factor 2: Use of positive emotion and subtle manipulation	
.713	#23
.624	#25
.614	#13
.488	#33
.430	#6
.424	#4
Factor 3: Use of withdrawal and egocentrism	
.903	#10
.554	#31
.494	#9
.450	#4
.432	#2
Factor 4: Use of persuasion and reason	
.610	#21
.513	#1
.512	#37
.425	#3

Note: Coefficient alphas for simple summed scales are .84, .79, .80, and .59, respectively. For Factor 4, reliability increases to .65 with the addition of behavior #12 (loading = .382), #38 (.364), #14 (.308), and #15 (.302).

2900 individuals contacted. Two potential explanations for this may be offered. First, the experimental task was rather demanding; the questionnaire consisted of four densely packed pages, and requested information which may have been considered of a sensitive nature. More importantly, it is unknown what portion of the 2900 questionnaire recipients were qualified to participate in the study in the first place (i.e., were both married and able to recall a recent joint purchase disagreement). At least 80% of the "unusable" questionnaires received were from people who wanted to participate in the study, but could not (mostly because they did not meet the requirements specified in the cover letter). Thus, a major part of the refusal rate might be accounted for by inability (rather than unwillingness) to participate in the study.

Several strong points of the study also bear repetition. Our knowledge of the process of conflict resolution has been advanced by integrating and augmenting the findings from a recent trend of inductive studies. The present findings were not biased by preconceived (deductive) notions regarding the strategies used to resolve conflicts. In addition, by integrating all the strategies found in the available inductive studies, this investigation was able to include a broader range of

conflict management behaviors than would otherwise have been the case.

The use of a nationwide sample of married individuals is clearly a strength of the present study. As noted earlier, even the previous inductive studies tended to use student samples. Besides the gain in external validity, this strength is particularly important in view of the fact that individuals tend to bargain differently based on the nature of their relationship with the person they are trying to influence.

The experimental task was not an artificial one, as had been the case in some of the previous work on conflict management. Subjects responded to the questionnaire with regard to a specific, recent, joint purchase conflict of their choice. They were asked not to participate in the study if they could not recall such a conflict. Thus, recall bias was minimized. These facts compare favorably with previous investigations which either used hypothetical conflict situations (e.g., Cody et al. 1980) or asked subjects to recall the frequency with which they had used various conflict management strategies over a period of several months (e.g., Kipnis et al. 1976). The nature of the experimental task also invited a variety of different purchase decisions to be reported on. Thus, the results are not constrained by the examination of only one type of product.

These conclusions lead to several suggestions for future research. Most obvious is the need to replicate the procedure, especially with those of lower socioeconomic status, in order to determine the stability of the factor structure. The influence of children should eventually be examined, as well as the comparative findings from two members of the same dyad. (In this study dyads were not used, as the issue of consensus was not essential to the development of the structural model.) Additional contributions would be made by examining conflict resolution through observational techniques. Such alternative methodologies would help establish the construct validity of the findings. It will also be useful to develop standardized measures of the various factors, so that a common vocabulary and an ability to generalize across studies may begin to develop. Once such standardized measures exist, it will be beneficial to resume the examination of such variables as personality, attribution of power, sex, length of marriage, etc., which might relate to the individual's choice of conflict resolution behaviors.

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Toward Understanding the Dynamics of Household Decision Conflict Behavior

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ABSTRACT

The underlying structure of household decision conflict and conflict resolution behavior is examined using the structural modelling technique partial least squares. Household conflict and conflict resolution are treated as multivariate constructs across multiple levels of a household automobile purchase decision. A process oriented framework of household decision conflict behavior is developed and tested. The results of the study indicate that there are multiple levels of conflict in a typical joint household purchase decision rather than an overall level of household conflict behavior found in previous research.

INTRODUCTION

For many family decisions, joint decision behavior is becoming the norm (Haas 1980) rather than the exception (Davis and Rigaux 1974) in today's households. One result of the increase in joint family decision making (FDM) between husbands and wives has been an increase in the potential for conflict arising in household decisions. Yet, most of FDM research has dealt with the decision role structure of the household focusing primarily on "who decides" (Davis 1976); seldom examining the role of conflict. Even studies which have examined the nature of conflict behavior specifically, tend to ignore the process orientation in which conflict exists, emphasizing more how conflict is resolved (Sheth 1974, Davis 1976, Burns and Granbois 1977, Belch et al. 1980, Seymour and Lessne 1984). Research is still needed to understand the process of conflict behavior and the role it plays in explaining how families make decisions. The purpose of this paper is to examine the process of conflict and the nature of conflict resolution in household decision behavior.

The Nature of Household Conflict Behavior

Research to date has failed to adequately capture the process of FDM conflict even though researchers have called attention to the need for models of FDM that take conflict into account, (Granbois 1971, Belch et al. 1980, Spiro 1983). Granbois (1971) has long contended that household conflict behavior better reflects the dynamic process of FDM than more traditional input-outcome models of FDM. To date the majority of FDM conflict research has focused on outcomes of the process; specifically conflict resolution.

Sheth (1974) in an adaptation of the March and Simon framework for intergroup conflict proposed four modes of family conflict resolution including: problem solving, bargaining, persuasion, and politics. As March and Simon, Sheth contends that FDM conflict arises as a result of 1) differences in purchase goals and 2) differences in perceptions regarding decision alternatives. As such in a typical household decision the potential for conflict is possible at two levels or stages during the same decision.

Conversely, Davis (1976) contends that most FDM is either consensual or accommodative in nature, based on predetermined roles and areas of decision responsibility. As such even for decisions involving both the husband and wife, very little conflict would be expected or perceived. According to Davis (1976)

consensual FDM takes place when there is agreement about purchase goals and decision alternatives; while accommodative behavior occurs when there is disagreement regarding purchase goals or decision alternatives or both. Such a framework is appropriate for classifying types of conflict, yet it is implied that conflict is likely to occur at various levels or stages during the decision process. Combining both the conceptual frameworks of Sheth (1974) and Davis (1976), Belch et al. (1980) constructed a seven category framework to describe household conflict resolution behavior. They found that couples have preferred strategies for resolving conflict. With few exceptions such studies have averaged individuals' conflict perceptions to derive some overall measure of conflict. Unfortunately, most of the FDM conflict research has only examined the issue from an overall level of household conflict behavior.

Sheth and Cosmas (1975) attempted to empirically test the use of the four alternative modes of conflict resolution proposed by Sheth (1974). They found that households used some form of conflict resolution more frequently (persuasion) than others (problem solving). Conversely, Belch et al. (1980) found that problem solving was the conflict resolution mode most frequently employed with bargaining and persuasion being used less frequently. One possible explanation for the discrepancy between the two studies results could be related to the fact that each study was tapping a different level of conflict behavior. The possibility also exists that such studies may have unintentionally confounded the perception of conflict resolution by employing a single summative measure of conflict. Perceptions of conflict resolution may represent the outcome of a process in which the husband and wife compares their conflict behavior during earlier stages of the FDM process. Finally, the findings from both studies could have resulted from the tendency for husbands and wives to behave in the manner expected by society.

While other studies have examined the issue of FDM conflict, they have focused primarily on the determinants of conflict behavior. Burns and Granbois (1977) found that involvement, empathy, and authority moderate the relationship between FDM and conflict resolution behavior and the degree of these constructs presence in FDM in most cases reduces the need for conflict resolution behavior. More recently, Seymour and Lessne (1984) have focused on examining the arousal of conflict in FDM. They contend that better measures are needed in order to examine a process oriented perspective of household conflict behavior. Thus our knowledge to date regarding FDM conflict has done a good job of identifying the determinants of conflict behavior and the outcomes (modes of conflict resolution), but needs to be further developed in order to capture it in process orientation. The purpose of the present paper is to test such a framework. The model that is proposed in the next section and tested in the paper is meant to be relational in nature and is not meant to indicate specific cause and effect relationships. Specifically the issues to be addressed in the current study include:

- 1) To what extent does conflict behavior occur at different levels (stages) of a joint household decision.
- 2) To test a process oriented theoretical framework which explains the network of relationships found household decision conflict behavior.

A Model of Household Decision Conflict Behavior

The review of previous research confirms the need to develop and test models of FDM that explicitly examines the role of conflict behavior in such models. The model of conflict behavior presented here integrates several compatible perspectives of FDM research to examine the nature of conflict based on a process orientation. Consistent with previous research in FDM, the model assumes that husbands and wives will have different perceptions regarding their influence in the outcomes of a household decision. Figure 1 illustrates the proposed model to be tested in the present study. In this model there are three main classes of variables which influences the degree of conflict and conflict resolution. The perception of influence perceived by the husband and wife affect the nature of conflict and conflict resolution both directly and indirectly, (Burns and Granbois 1977, Qualls 1984). The perceived influence held by husbands and wives is captured by measures of their sex role orientation, proportion of shared influence, involvement in the product, and the importance of the decision. The second set of variables affecting conflict behavior is the influence attempts (Spiro 1983) by the husband and wife. Based on the husband and wife perceptions of influence and their perception of their attempts to influence their spouses' decisions, conflict will arise. Conflict is conceptually defined in the present study as consisting of disagreement between husbands and wives over household purchase goals, decision alternatives, or the decision process itself. Finally the mode of conflict resolution is a function of the degree of conflict, husband and wife influence attempts, and the perceptions of influence held by the

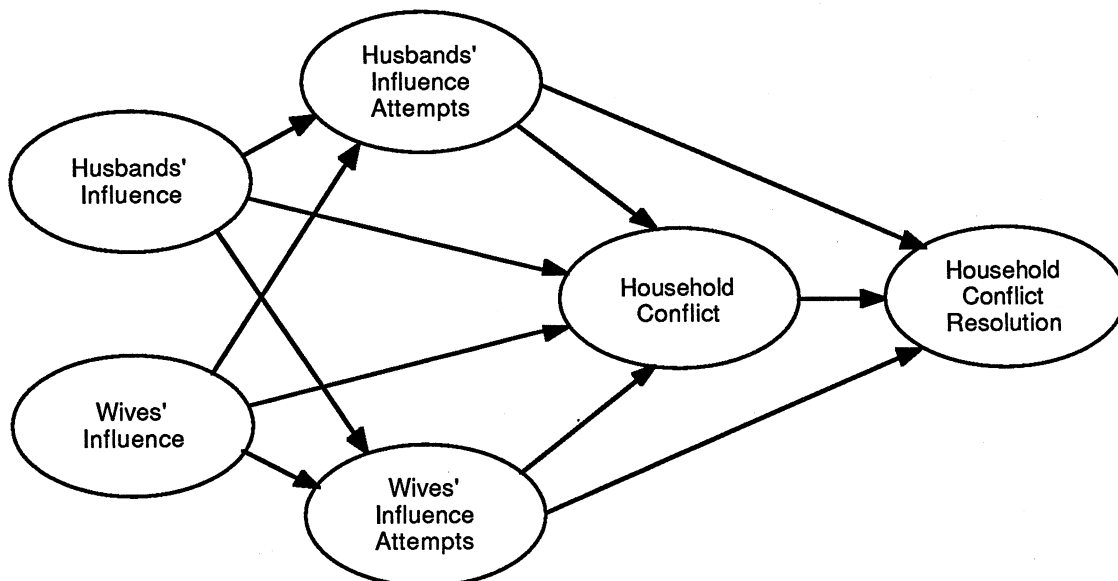
husband and wife. Each of the major constructs hypothesized in the model is examined in detail below.

Household decision role structure as a function of the level of perceived influence is the most explored aspect of FDM, (Davis and Rigaux 1974, Davis 1976, Qualls 1984). The degree of influence in household decisions is reflected in who decides or perceptions of how a decision is made. Influence is defined in the present study as the perception of the action taken by one spouse to obtain his or her most preferred decision outcome while simultaneously stopping the attainment of their spouses' most preferred outcome. Structurally, husband and wife influence is determined by an individual's perception of influence held for a particular decision, the importance of that decision, their involvement with the product, and the sex role orientation of the spouse.

Yet, mere perceptions of influence is ineffectual, unless one actually attempts to influence the other spouse's behavior. Spiro (1983) contends that it is the influence attempts by a spouse that serves as a more accurate indicator of the process of FDM. Specifically, six different influence strategies have been identified as those being the most often employed by husbands, and wives include:

- Expert- refers to the spouse who has superior information regarding decision alternatives.
- Legitimate- refers to the spouse who attempts to influence the other based upon their position in the household.
- Bargaining- involves an attempt by a spouse to gather influence presently to be reciprocated to the other spouse at some future date.
- Reward/Referent- is an attempt by a spouse to influence the behavior of an another by offering a reward.
- Emotional- involves a spouse using some emotional laden reaction in the hope of influencing the other's behavior.

**FIGURE 1:
A MODEL OF HOUSEHOLD DECISION CONFLICT BEHAVIOR**



Impression Management- involves any persuasive attempts by one spouse to influence the behavior of the other.

In the present study the emphasis is placed on the influence strategies used by both spouses and not the individual influences strategies themselves.

The use of a particular influence strategy itself may be sufficient to cause disagreement between husbands and wives, but in addition conflict is a function of the influence perceptions of both the husband and wife. As such conflict is defined as the level of disagreement that exist between husbands and wives regarding decision alternatives.

It's our belief that conflict exists in two forms, perceived conflict and manifest conflict. As a perception, conflict is affective in nature referring to household disagreement that is felt. As manifest conflict, it is behavioral in nature, referring to actual disagreement over household decisions between husbands and wives.

In the proposed model manifest conflict is structurally determined by the level of preference discrepancy (Burns and Granbois 1977), while the perception of cognitive conflict (Hammond 1973), and conflict arousal (Seymour and Lessne 1984) serve as determinants of perceived conflict. Preference discrepancy refers to actual disagreement over several different decision alternatives. Cognitive conflict is the awareness of inconsistent preferences between husbands and wives when based on the same set of decision alternatives. As such cognitive conflict exists when one spouse perceives that their individual preferences are different from that of their spouses. While the former represents an actual measure of disagreement, the latter is a perceived discrepancy based on the spouses' ranking of their partners desired set of decision alternatives. Finally, conflict arousal is defined as the perceived level of dyadic discordance during a joint household decision (Seymour and Lessne 1984). It refers to a husband and wife orientation or tendency towards conflict.

When conflict exists in an household, it must be resolved in order for the household to continue to function. As such, alternative modes of conflict resolution must be considered in order for a decision to take place. The method by which husbands and wives resolve decision conflict is determined by the level of husband and wife influence, their attempts to influence each other, and the degree of conflict. The framework used here draws heavily from the work by Thomas (1973), which combines two dimensions cooperation (attempting to satisfy the other spouse's concerns) and assertiveness (attempting to satisfy one's own concern), as the foundation for the framework for handling conflict. The four modes of conflict resolution used in the present study include :

Competition-represents an attempt by a spouse to completely dominate a decision by force. The objective is to satisfy one's own personal preference regardless of the preference of their spouse.

Concession-involves a spouse adhering to the preferences of the spouse unconditionally or conditionally in return for future considerations

Avoidance-Withdrawal- refers to inaction to avoid an argument by either spouse to resolve the conflict in the hopes that time will help to sway the other spouse from their original position to one closer to their own.

Bargaining- is characterized by spousal behavior in which there is an effort by both spouses to achieve a balance in their original preference positions through compromise.

The measures of conflict resolution, conflict, influence attempts, and perception of influence is summarized in Table 1. The next section presents the methodology employed and a brief discussion of the analysis technique.

METHODOLOGY

In-home personal interviews were conducted for 63 husband-wife households in a medium size midwestern city with a population of about 100,000 people. Couples for the study were solicited through a circular distributed throughout the complex from a large cooperative family unit apartment. Each respondent was paid a ten dollar honorarium for their participation in the study. Primarily a convenience sample, the respondent group is not meant to be generalizable to the population, but it is clearly representative of the potential target market for automobiles. The average age of husbands and wives was 33, with at least one spouse employed fulltime. Average household income was approximately \$21,000. Seventy Five percent of the respondents had at least a four year college degree.

Household couples were told they were participating in a survey by a major automobile firm who wanted information on the preferences of consumers regarding future automobile purchase behavior. A debriefing session held with each couple revealed that respondents were not aware of the true purpose of the the study which was to examine conflict and conflict resolution behavior. Husbands and wives were first interviewed individually to obtain their responses on a series of paper and pencil tasks. Upon completion of the individual questionnaires, husbands and wives were brought together in a room in which they jointly participated in an automobile purchase decision task.

The automobile purchase was chosen as the decision task because it is commonly accepted as a joint decision involving several subdecisions (Davis 1970, Green and Cunningham 1975). Couples were told that they were participating in an hypothetical decision in which they had to make several subdecisions regarding their purchase of an automobile. Specifically, these subdecisions included:

- 1) What should the make/model of the automobile be?
- 2) What color automobile should be purchased?
- 3) Should the automobile be bought or leased?
- 4) What options should be included on the automobile?

For each of the subdecisions (excluding the buy/lease subdecision) at least six alternatives were listed. The survey took approximately 50 minutes to complete. Respondents were to pretend they were in the process of buying a new automobile. The only restriction was that they could only be approved for a loan up to \$20,000. Based on the subdecisions listed previously they were to rank order the alternatives for each of the subdecisions.

The questionnaire contained measures to obtain information on six different latent variables hypothesized in the model. Separate measures were obtained for both husbands and wives for each manifest variable, and jointly for ten manifest variables.

TABLE 1
SUMMARY OF LATENT CONSTRUCT MEASURES

Construct/ Measure variable	Scale	Number of Items	Example	Source
<i>Husband/Wife Influence</i>				
Sex Role Orientation	5 Point Agree/ Disagree with her husband in making decisions.	10	A wife should not have equal authority	Scanzoni (1972)
Decision Importance	5 Point Very important/ Very Unimportant automobile ?	4	How important is make/ model decision to you in the purchase of an	Constructed
Product Involvement	7-Point Semantic Differential decision?	20	How do you perceive the automobile purchase	Zaichkowsky (1985)
Perceived Influence	Constant-Sum Scale	4	In your family the fair proportion of husband/ wife influence in making automobile make/model decision should be ?	Qualls (1984)
Husband/Wife Influence Attempts	Likert Rank Order	6	Couples were asked to rank order the scales according to how each one viewed their attempts to influence. "I offered to do something s/he wanted if s/he would agree to my decision on this."	Spiro (1983)
<i>Household Conflict</i>				
Husband/Wife Cognitive Conflict	Rank Order subdecision alternatives based upon how you think your spouse would rank order them.	4	Rank order the following	Constructed
Husband/Wife Conflict Arousal	7-Point Agree/Disagree expression of social image.	15	An automobile like many other products, is an	Seymour and Lessne (1984)
Preference Discrepancy	Rank order automobile subdecision alternatives.	4	Rank order the following	Qualls (1984)
Household Conflict Resolution	Rank Order Most Often/ Least Often the other spouse's wishes	4	In resolving household conflicts one spouse will typically concede to	Constructed

A summary description of each of these measures are listed in Table 1.

The objective of the analysis was to examine the significance of the relationship of the conceptual network of household conflict behavior. Data from the study were analyzed via partial least squares (PLS) a structural modelling technique in which hypothesized latent constructs are estimated indirectly through a set of observables manifest variables (Wold 1982). PLS offers

some advantages over the more popular maximum likelihood estimation procedure LISREL. PLS is not as restrictive with respect to sample size and distribution requirements. PLS maximizes the degree of explainable variance for a network of hypothesized relationships, while allowing interactions between the models structural variables, and observable constructs. Hypothesized constructs are estimated by way of a series of interactive regressions, in which each latent variable is predicted as

a function of its observed indicators. PLS as an analytical technique is gaining popularity as a method for developing and testing theory. (Fornell and Larcker 1982, Fornell and Robinson 1983, Fornell et al 1983). The interested reader is referred to these sources for a more detailed explanation of PLS. Löhmoller (1981) LVPLSC program of latent variable path analysis with partial least squares estimation is used to derive the models' path estimates. Tables 2 and 3 present the results of PLS analysis of the measurement and structural models respectively and are discussed in the next section.

RESULTS

While the benefits of capturing a process oriented view of household decision conflict are many, the difficulty lies in measuring such a complex process. In PLS there is no true overall test of the hypothesized model or an assessment of the fit of the model to the data. Fornell et al. (1983) have developed a set of descriptive statistics useful in evaluating PLS models. Based on the data analysis suggestions by Fornell et al. (1983), the results of the analysis of the structural model and measurement model hypothesized are discussed below.

Table 2 lists the results of the analysis of the measurement model. The measurement model exemplifies the meaning of the measures that is gained from being hypothesized in its present theoretical network of household relationships. Specifically, the PLS estimates of the factor loadings, the reliability of each measure, and the average variance extracted (ave) is illustrated. Nunnally (1978) criteria of .5 for reliabilities, and Fornell and Larcker (1981) suggestion of .5 is used to evaluate the acceptability of the measurement modes.

Examination of the measurement model results indicates that the hypothesized measures are at best suspect. Only 13 of the 32 measures exceed the minimum criterion suggested by Nunnally for exploratory research. Low loadings provide further evidence that the measurement model could be improved. The presence of low loadings for the measurement variables can be traced to the multidimensionality of latent construct, or the unreliability of the measures themselves. The latter reason is the most likely explanation. Similarly, the average variance extracted by each of the hypothesized latent constructs fails to exceed the suggested minimum criterion of .5 by Fornell and Larcker (1981). The solution to the low reliabilities is found in the development of improved measures, while low loadings can be handled by a revised model. Yet the focus of the present study goes beyond the individual measures to the network of hypothesized relationships. The structural model provides results which are more appropriate for evaluating the system's view of household conflict behavior.

A more appropriate evaluation of the hypothesized model is the explanatory power or the ability of the model to predict based upon the hypothesized theoretical network. In addition, specific hypothesized relationships in the model can be tested by examining the size, sign, and significance of the path coefficients. The results of the structural model analysis are presented in Table 3. The results of this analysis are much more encouraging when 47% of the variance in household conflict resolution is accounted for by the present network of hypothesized relationship. Similar findings are found for both husbands' and wives' influence attempts accounting for 45 and 30 percent of the

variance respectively. Conversely minimum explanatory power is captured by the latent construct household conflict. Such results are encouraging for exploratory research of the nature presented here.

Further examination of the models' path coefficients reveal conflicting findings. Although the signs of the path coefficients are in expected direction, most are relatively small and, there were more nonsignificant paths than there were significant paths.

DISCUSSION

Underlying the model developed and tested in the present study is the contention that household decision behavior can be better understood by examining conflict behavior and how it's handled. While the explanatory power of the proposed model is encouraging, the size of the path coefficients could be due to the measurement problems discussed earlier.

TABLE 2
RESULTS OF PLS ANALYSIS MEASUREMENT MODEL

Latent Construct/ Measures	Factor Loadings	Reliabilities	Average Variance Extracted
Husbands Influence			.31
Sex Role Orientation	.35	.12	
Decision Importance	.21	.04	
Product Involvement	-.36	.13	
Perceived Influence	.97*	.94	
Wife Influence			.43
Sex Role Orientation	.75*	.56	
Decision Importance	.60*	.36	
Product Involvement	.73*	.53	
Perceived Influence	-.52*	.27	
Husbands Influence Attempts			.45
Expert	.67*	.45	
Legitimate	.75*	.56	
Bargaining	.82*	.67	
Reward/Referent	-.44	.20	
Emotional	-.72*	.51	
Impression Management	-.58*	.37	
Wives Influence Attempts			.37
Expert	.56*	.31	
Legitimate	.83*	.69	
Bargaining	.82*	.62	
Reward/Referent	-.34	.12	
Emotional	-.19	.03	
Impression Management	-.56*	.31	
Household Conflict			.43
Husband Cognitive Conflict	.48*	.23	
Wives Cognitive Conflict	.54*	.29	
Husband Conflict Arousal	.63*	.40	
Wives Conflict Arousal	.66*	.44	
Make/Model Subdecision	.81*	.66	
Color Subdecision	.66*	.44	
Buy/Lease Subdecision	.69*	.48	
Options Subdecision	.72*	.52	
Conflict Resolution			.51
Competition	.82*	.67	
Concession	.72*	.52	
Avoidance-Withdrawal	.76*	.58	
Bargaining	.51*	.26	

* Significant at .10 level or better

TABLE 3
RESULTS OF PLS ANALYSIS STRUCTURAL MODEL

Hypothesized Paths	Path Constructs	R ²
Husbands' Influence (HINF)		NA
HINF --> HIA	.61*	
HINF --> WIA	.39*	
HINF --> HCONF	.01	
Wives' Influence (WINF)		NA
WINF --> HIA	.13	
WINF --> WIA	.28*	
WINF --> HCONF	.10	
Husbands' Influence Attempts (HIA)	.45	
HIA --> HCONF	.09	
HIA --> CONRES	.06	
Wives' Influence Attempts (WIA)	.30	
WIA --> HCONF	.08	
WIA --> CONRES	.11	
Household Conflict (HCONF)	.02	
HCONF --> CONRES	.69*	
Household Conflict Resolution (CONRES)		.47

* Significant at .05 level or better.

Even with these measurement difficulties, some interesting and encouraging findings emerge. For example, the measurement of husband and wife influence revealed substantially different perspectives regarding the foundation of the influence perceived by husbands. It was their perception of the distribution of influence that keyed its impact on other household behaviors, whereas the wives sex role orientation, product involvement, and importance of the decision contributed more to the impact of wives' influence on the decision. Such findings suggest that husbands' preconceived notions of the traditional household roles has changed very little. The loadings indicate that with respect to the automobile purchase decision, that husbands are still traditional in their orientations, while wives would like to be more egalitarian.

A second encouraging result was the ability to explain what could be classified as more active or process oriented household behavior than specific decision acts. Specifically, for household behaviors such as husband/wife influence attempts and conflict resolution, a larger portion of the explainable variance was captured than for household behavioral acts such as conflict.

Similarly, the ability of the model to capture conflict behavior over a series of automobile subdecisions overcame earlier problems which only addressed the issue of overall conflict. The explanatory power of the conflict resolution construct shows consistent results with past findings (Belch et al. 1980, Burns and Granbois 1977). The decision process, or subdecisions in the process, affect the method in which conflict is resolved. The antecedents to household conflict resolution cross all levels/stages of the decision process. As such decisions made during one stage impact and affect decision behaviors in different stages.

A comparison of husband and wife responses shows some differences, but generally husbands and wives view conflict behavior and the handling of conflict in a similar way. What is evident is that household conflict behavior is more complex than the model

proposed here. Although the model proposed here takes a process-oriented view and is more complete than others, it is not surprising that there are other factors which may account for the unexplained variance. For example, Burns and Granbois (1977) have shown the effect of certain moderating factors in reducing the need for conflict resolution.

The limitations of the present study may also account for the findings. Beyond the measurement issues, the sample size and its cross sectional makeup contribute to the lack of stronger findings. As such, generalizations to other populations or causal conclusions drawn from the hypothesized model should be limited. In addition, the design of the study which is based upon both perceptions and behaviors may raise a few questions. Yet, it is viewed as a particular strength of this study over previous studies, that perceptions and behavior were measured simultaneously.

The nomological validity of the proposed process model of household decision conflict behavior is the most significant contribution of the present study. If the degree to which predictions are confirmed based upon the theoretical framework containing the hypothesized constructs, the high R² obtained for the model is just one indicator of the model's predictive capabilities. While other researchers have called for the need to examine household behavior from a systems perspective, the present study is one of the few attempts which has accomplished this task. The findings, although weak, are suggestive of a theoretical framework which can be developed through further research. Thus, the general framework developed and tested here can serve as a guide to a program of research using process perspectives in examining household decision behavior of particular interest. Future research should address such questions as: 1) Does conflict differ during different stages and/or do different factors affect conflict and conflict resolution during these stages?

Answers to such questions will move us beyond the complaints of researchers that knowledge of FDM is limited to just knowing "who decides."

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**Adolescents' and Mothers' Perceptions of Relative Influence in Family Purchase Decisions:
Patterns of Agreement and Disagreement**
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Abstract

Mothers' and adolescents' perceptions of relative influence in family purchase decisions are compared over a wide range of product types and costs. Their perceptions of influence vary depending upon who will be the primary user of particular products, and on product cost. Both mothers and adolescents rate adolescents as having at least some influence for the majority of the 14 products studied. Product importance is also found to be directly related to perceptions of relative influence for some products.

Introduction

Research has shown that children play a significant role in some family purchase decisions and their influence varies by product categories and decisional stages (Moschis 1987). In general, for products in which the child is directly involved in consumption, the child is expected to have at least some influence on the decision. Few studies, however, have attempted to distinguish patterns of influence by product user (i.e., products for child, for parents, or for family use); and most studies have measured children's influence only for the purchase of breakfast cereal, or for major family purchases. There has also been no investigation of the relationship between product importance perceptions and children's perceived influence in family decision making.

This study examines adolescents' perceived influence in family purchase decisions for a variety of product classes used by different family members and representing a broad range of prices. Mothers' and adolescents' perceptions of influence are compared graphically and statistically, and the relationship of importance perceptions to decision influence ratings is also examined. Essentially, the study asks the following research questions:

1. To what extent do mothers and adolescents agree in their perceptions of adolescent influence in family purchase decisions?
2. To what extent do product importance and product user affect mothers' and adolescents' perceptions of influence in family purchase decisions?

Although children at all ages have been shown to exert influence and to have "resocialized" their parents, this study focuses on adolescents. They are the age group with full cognitive development (Piaget 1970), and have been demonstrated to understand economic concepts (Strauss 1952) and consumer skills related to information processing (Roedder 1981; Wackman and Wartella 1977). They are also expected to model their behavior on that of adults to at least some extent (Lerner and Shea 1982). Adolescents thus appear to be an appropriate age group for investigating children's influence in family purchase decisions. As adolescence is not an easily defined period in terms of physical development (Chumlea 1982), we included only teenagers (i.e., ages 11 to 19) in the study.

Consumer Socialization

When investigating consumer behavior of parents and children in a family setting, most studies in the marketing discipline may be described as focusing on two main categories: they either investigate how parents and/or other agents (e.g., mass media, peers) socialize their children in acquiring values and skills related to purchasing and consumption (e.g., Douglas 1983; Filiatrault 1980; Moschis and Churchill 1977, 1978; Szybillo et. al. 1977); or on how parents yield to younger children's requests, particularly for food products (Atkin 1978; Berey and Pollay 1978; Maholtra and Torger 1977; Ward and Wackman 1972).

As a child becomes an adolescent, his/her role in "resocializing" parents appears to become greater. Canadian adolescents have been found to affect their parents' attitudes and behavior in such areas as sports, leisure, drug use, sexuality, youth, and minority groups (Peters 1985). Adolescents have also been found to attempt to influence their parents' behavior regarding personal appearance, day-to-day activities, repair and redecorating, and car purchase (Baranowski 1978).

In marketing, recent studies have reported evidence of adolescents' influence (as perceived by mothers) on specific family decisions, varying by product class, decision stage, and geographic areas (Darley and Lim 1986; Moschis and Mitchell 1986). Belch et al.'s (1985) study obtained similar results in comparing perceived influence rated by fathers, mothers, and children. While such influence may not be the same as the more long lasting socialization process, Moschis (1987) explains that children's influence on purchase decisions may help parents redefine their consumer roles to incorporate the child's expectations, thereby resulting in resocialization to a modified consumer role.

Family Decision Making

Consumer behavior research on family decision making has generally focused on how husbands and wives handle purchase decisions, ignoring the presence of children and their possible role in such decisions. Such studies (e.g., Davis 1970; Davis and Rigaux 1974; Bonfield 1977) have classified family purchases into four decision influence categories: husband dominant, wife dominant, autonomic (separate), and syncretic (joint). This classification may reasonably be adapted for use in examining adolescents' relative influence in family purchase decisions. There is, however, no basis for expecting that decisions found to have been syncretically handled by husbands and wives will prove to be syncretic for parents and children. For this reason, the present study assesses influence over a wide range of product types and cost.

The most commonly used method of assessing husband-wife influence in family decisions has been a self-report, nominal, five- or three-point scale, e.g.: 1 = husband had the final say, 2 = joint decision, 3 = wife had the final say (cf. Davis 1976, Burns 1977, Green and Cunningham 1975, Rigaux-Bricmont 1978). A relative measure of influence clearly simplifies the investigation

of family decision influence, as it requires respondents to view decisions in a family context rather than from their own egocentric perspective. The present study employs a five-point relative influence scale to avoid potential problems caused by the separate measure of individual family members' decision influence.

Some early studies of husband-wife decision making or parental yielding to children's requests drew their conclusions based on the self-reported responses of just one family member, usually the wife or mother (e.g., Atkin 1978; Szinovacz 1978).

Most recent studies of family decision making have obtained influence assessments from either husband and wife or mother and child, with one study (Belch et al. 1985) of children's influence obtaining data from mother, father, and one child. The present study contains influence assessments from mothers and adolescents regarding relative parent-child decision influence.

Research Methodology

Research Hypotheses

1. Mothers and adolescents disagree in their ratings of adolescents' decision influence relative to parents.
2. The relative purchase decision influence attributed to adolescents varies depending upon:
 - a. who will be the primary user; and
 - b. perceived product importance.

Sample

The sample for the study consisted of 193 pairs of mothers and adolescents in three small northwestern towns. Middle school and high school officials were contacted, and four schools agreed to participate in the survey. Questionnaires were administered to students in class; each student was then asked to take a questionnaire home for his/her mother to complete and return to school in one week. Of 525 students who filled out the "adolescent" version of the questionnaire, 193 (37.1%) brought back the "mother" survey. The adolescent sample consisted of male and female middle school and high school students, with an average age of 15 years old and an age range of 11 to 18 years old. Males and females were represented almost equally in the study. Adolescents were from primarily middle-class families, with an average household income of between \$30,000 and \$40,000 annually. Most mothers were between 30 and 50 years old and had at least a high school diploma (34%) or some college education (54%). The demographic characteristics of the sample are summarized in Table 1.

Measures

Perceived Influence: Perceived influence in family purchase decisions was measured by asking both adolescents and their mothers to rate the relative decision influence of parents and children on a one-to-five scale, with 1 indicating parents made the whole decision, 2 indicating parents have more say than the child, 3 indicating a decision in which parents and adolescents had an equal say, 4 indicating the child had more say than the parents, and 5 indicating that the adolescent made the whole decision. Influence ratings were obtained for 14 products, six for family use, six for the adolescent's own use, and the remaining two for use by parents. The product set included both high-involvement products (e.g., automobile, computer, dress clothes) and low-involvement products (e.g., toothpaste, groceries). Most of these products were used in previous parent-child

Table 1
Demographic Characteristics of Sample

	Percent
Adolescents	
Sex:	
Male	49.5
Female	50.5
Age:	
11	4.2
12	10.9
13	12.5
14	10.9
15	15.6
16	21.4
17	18.2
18	5.7
19	0.5
Mothers	
Age:	
30 or less	3.1
31—39 years	36.5
40—49 years	54.2
50—59 years	6.3
Education:	
High school	33.9
College degree	51.0
Graduate school	15.1
Household Income:	
less than \$10,000	5.5
\$10,000—\$19,999	11.0
\$20,000—\$29,999	24.3
\$30,000—\$39,999	29.3
\$40,000—\$49,999	17.1
\$50,000—\$59,999	7.2
\$60,000—\$69,999	3.3
\$70,000 or more	2.2

studies; we have added a few more contemporary products such as computers, cable TV, and magazine subscriptions. We also attempted to examine products both for children's use and for family or parents' use. The fourteen products included in the study are listed in Table 2.

Product Importance: The importance of products included in the study was measured using a five-point scale in which a one rating indicated "really important" and five rating indicated "really unimportant." Mothers and adolescents were each asked to rate the importance of all 14 products.

Analysis and Results

Influence Perceptions of Mothers and Adolescents

The extent of agreement in mothers' and adolescents' perceptions of relative influence in family decisions was first tested using analysis of variance. The dependent measure in the analysis was perceived influence, and respondent (mother or child) and product (each of the 14 included in the study) were the independent variables. The analysis of variance was significant overall ($F = 354.12$, $p = 0.0001$), and both respondent and product were significant sources of variation in influence ratings (each $p = 0.0001$). The two variables together accounted for approximately half of the variation in influence ratings ($R^2 = 0.50$).

Perceived Influence and Product Categories

Adolescents' mean perceived influence rating across products was 2.52, and mothers' was 2.25. A Scheffe's test of these groups indicated that the means

Table 2
Mean Influence Ratings Across Products
(Standard Error Values in Parentheses)

		Perceived Relative Influence	
		Mother's Ratings	Adolescent's Ratings
1.	Records for child ^b	3.90 (0.08)	4.12 (0.07)
2.	Home computers for child	2.28 (0.08)	2.32 (0.08)
3.	Home computers for family	2.00 (0.07)	2.00 (0.07)
4.	Groceries ^a	1.95 (0.05)	2.06 (0.04)
5.	Living room furniture ^c	1.53 (0.06)	1.68 (0.05)
6.	Toothpaste for child	2.68 (0.10)	3.37 (0.09)
7.	Toothpaste for family ^b	1.86 (0.07)	2.18 (0.06)
8.	Dress clothes for child ^b	3.58 (0.07)	3.86 (0.06)
9.	Dress clothes for parents	1.38 (0.04)	1.29 (0.04)
10.	Cable television subs.	2.01 (0.07)	2.05 (0.07)
11.	Bicycle for child ^a	3.43 (0.08)	3.49 (0.07)
12.	Car for family	1.63 (0.05)	1.61 (0.05)
13.	Magazine subs. for child ^a	3.70 (0.09)	3.91 (0.07)
14.	Magazine subs. for parents ^a	1.16 (0.05)	1.36 (0.03)

The scale ranges from 1=parents make the whole decision, 2=parents have more say than child, 3=parents and child have equal say, 4=child has more say than parents, and 5=child makes the whole decision.

- a Significant at $p < 0.01$.
- b Significant at $p < 0.05$.
- c Significant at $p < 0.10$.

were significantly different ($\alpha = 0.05$): that is, adolescents overall rated their decision influence as greater relative to parents than did mothers. Table 2 presents mothers' and adolescents' perceived influence ratings for the 14 products.

It was felt that a graphical presentation of influence ratings showing individual responses from mothers and adolescents by product might yield greater insight into the extent and occasion of agreement/disagreement between respondents. This comparison of influence responses appears as Figure 1.

Davis and Rigaux's (1974) method of depicting relative influence was adapted for use in the present study. The method plots responses for product categories along two axes, mean relative influence (vertical) and degree of role specialization (horizontal -- the percentage of respondents who indicate the decision is a joint one). Products are classified into one of four decision categories based on their plotted position: child dominant, parents dominant, syncratic (joint decision), or autonomic (separate).

Figure 1 indicates a considerable amount of adolescent influence in family purchase decisions. Records for the child are the only product for which mothers and adolescents agree that the adolescent is dominant; however, both mothers and adolescents agree that adolescents have some decision influence

(sometimes more than parents) in the purchase of products for their own use, including dress clothes, bicycles, and magazine subscriptions. (The Figure indicates a similar but statistically nonsignificant pattern of influence for home computers for the child and toothpaste for the child.)

The Figure also provides more information about the relationship between influence ratings of mothers and adolescents. It illustrates what the Scheffe test indicated: that adolescents consistently rate themselves as having more influence relative to parents than do mothers. Additionally, for nearly all products, a greater percentage of adolescents state that decisions are made jointly (i.e., give a 3 rating of "equal say") than do mothers.

The exceptions to this are for records for the child and magazine subscriptions for the child, suggesting that mothers more than children perceive it is right to involve themselves in decisions regarding entertainment and reading matter to which their child will be exposed. Finally, the Figure also shows that adolescents have the least influence in decisions regarding products for the parents' own use (e.g., magazine subscriptions), and for products that represent major, infrequent family expenditures (e.g., living room furniture).

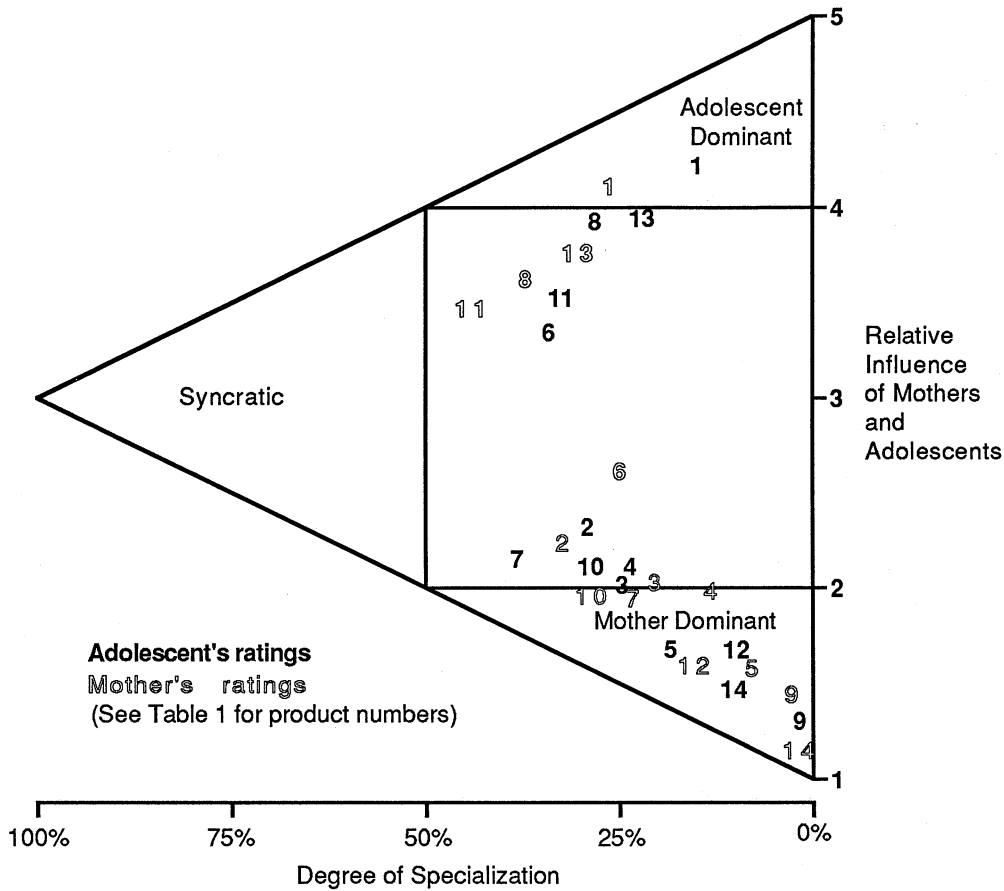
Perceived Influence and Product Importance Perceptions

The relationship of perceived product importance to perceived decision influence was investigated by examining Pearson correlation coefficients for the two variables by separate product and respondent. With 14 products and 2 respondents, a total of 28 correlation coefficients were examined. The results were essentially negative: over half of the correlations (17) were not statistically significant, and the correlations which were significant were very low (ranging from |0.14| to |0.28|). The highest correlations were as follows: 1) mothers' perceptions regarding toothpaste for child, at $r = 0.28$ ($p = 0.0004$) -- indicating that the more important mothers perceive toothpaste for the child to be, the more they will perceive parents to be influential in its purchase; and 2) mothers' and adolescents' perceptions regarding cable t.v., at $r = -0.26$ and -0.23 ($p = 0.001$ and 0.007) for adolescents and mothers respectively -- suggesting that the more important respondents considered cable t.v. subscriptions, the more likely they were to rate adolescents as influencing their purchase.

Products were grouped by primary user -- child or family/parent -- and the correlations between importance and influence perceptions were examined by product and respondent. For the eight products for family or parental use, mothers' responses indicated only two statistically significant correlations between importance and influence perceptions -- for toothpaste for the family and cable TV subscriptions. Adolescents' responses revealed only one statistically significant relationship -- for cable TV subscriptions.

Relationships between importance and influence -- and disagreement regarding such relationships -- were more often observed in the set of products used primarily by the child. Adolescent responses displayed significant positive correlations between perceived importance and influence or four of six products used primarily by them -- records, personal computer, bicycle, and magazine subscriptions. Mothers' responses also displayed significant correlations for four of six products used primarily by the child -- records, personal computer, toothpaste, and dress clothes. Mothers'

Figure 1
Graphical Comparison of Perceived Influence by Respondent and Product



perceptions of influence and importance agreed with adolescents' for records and personal computers; however, the more important mothers perceived toothpaste and dress clothes to be, the less decision influence they perceived adolescents to have in purchasing such products.

Discussion and Conclusions

The research hypotheses are supported, except for the hypothesized relationship between product importance and decision influence perceptions. Consistent with findings in previous studies, mothers and adolescents do differ in their perceptions of adolescent influence in family purchase decisions; the difference is statistically significant but fairly small in magnitude. Children consistently rate their decision influence as greater relative to parents than do mothers, and more children perceive purchase decisions to be made jointly than do mothers. Adolescents' perceived influence in purchase decisions also varies depending on the user and the cost of a product. The relationship of product importance perceptions to perceived decision influence is less clear. Fewer than half of the correlations for respondents and products are statistically significant, and correlations which are significant are small.

Despite a relatively low response rate, the present study yields ample evidence to show that adolescents are active participants in family purchase decisions, with significant decision influence even in the purchase of some products that are expensive or not for their own

use. Future studies can expand our knowledge base of family decision making by assessing fathers' and other family members' influence perceptions.

Examining more than just influence on decision outcomes (as did Belch et al. in 1985) will certainly improve our understanding of family influence relationships. The findings of the present study clearly suggest that future studies need to include a broad range of purchase decisions, not just the more or less standard list from previous husband-wife studies. Furthermore, because of the natural tendency for influence ratings to differ across respondents, resulting a significant F test and large R-square, future family-dyad research should attempt to determine sources of such differences.

Finally, we greatly need to develop and test models explaining the reasons family members perceive particular patterns of relative influence. Differences do exist in importance-influence perceptions between mothers and adolescents across products groups by primary user, but the reasons for those differences are not at present clear. A few partially tested explanatory models of husband-wife decision making do exist (e.g., Buss and Schaninger 1983, Hill and Scanzoni 1982), but children's roles cannot just be tacked on to these models. The presence of children changes the relationship between husbands and wives, and over time changes (resocializes) each parent. For this reason, models of family decision making must differ from models of husband-wife decision making.

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Recent Developments in Research on Family Decisions

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Abstract

A number of important developments in family decision research have occurred in recent years. This paper discusses these advances in terms of four major topic areas. First, patterns of household consumption are discussed from the perspective of recent social and economic trends. Second, research on family members' relative influence in decision making is reviewed. Recent research on decision processes, including studies of conflict resolution, influence strategies and decision plans is the third major topic of discussion. The fourth topic concerns significant barriers confronting research on the family. The paper closes by identifying some worthwhile topics for future research.

INTRODUCTION

The nature of family and other joint consumption is a particularly important topic for consumer researchers. Three basic reasons account for its significance. First, a substantial proportion of all consumption involves the shared use of products and services. Most housing units are shared, as are the products and services consumed therein, including food, utilities, appliances, insurance, autos, and so forth. In addition, joint purchase decisions can be far more complex than the choices made by an individual consumer, since they require the recognition and handling of the interests and desires of several participants. The nature of influences can be either direct (e.g., through involvement in the evaluation of alternatives), or indirect (to the degree that a person's needs or desires are considered by those who are buying). Finally, the 1970's and 1980's have brought a series of economic and social changes in the contexts within which household decisions are being made.

In recent years a number of important developments have occurred in research in this area. This paper provides an overview of these and points to further directions in which future research efforts would be fruitful. The coverage consists of four major topics:

1. *Household consumption patterns.* How have these changed due to the dramatically shifting demographic, economic, and social trends during the 1970's and 1980's?
2. Studies of *relative influence* in family decisionmaking. How much influence do family members —husbands (if present), wives, and children — have on particular product and service decisions?
3. Studies of *decision process* within family decision making. How does a family actually make its decisions, and what methodologies are most appropriate to this type of analysis?
4. *Why more research has not been undertaken in this area.* Why is family research so difficult? What barriers need to be addressed to undertake good research in this area?

SOCIAL TRENDS AND FAMILY CONSUMER BEHAVIOR

The 1970's and 1980's have witnessed a series of economic, demographic and social trends which dramatically affect consumers' lives. Rising income, educational levels and expectations are just a subset of the powerful forces reshaping the economic and social environment. As the 'baby boom' generation approaches maturity, for example, continued population growth and shifts in the population age structure promise to have a profound impact on our future. The consumer research literature contains no overall discussion of precisely how these trends pertain to consumption by families, but several articles have analyzed impacts of specific cultural shifts. These include the effects of increased household formations, of residential mobility, and of the cultural shift toward working women within the family.

Exploding Households And Residential Mobility

A virtual explosion in the *number of American households* has clearly affected the total demand for many types of products and services in recent years. According to the Census Bureau's definition, each occupied housing unit in the nation comprises one household (thus a large family home, a single-person studio, and a three-roommate apartment would each constitute one household for statistical purposes). As of 1990, there are expected to be approximately 100 million households in the United States. Most households are families: approximately 70 million families are expected in 1990 (Wilkie 1986). All products and services consumers consider household necessities (e.g., refrigerator, telephone, insurance, furniture, etc.) will tend to have at least one additional unit added for each newly-formed household unit.

As an indication of the manner in which shifts are occurring, consider that, during the 1970's, while the population grew just over 10 percent, the number of households grew at more than double this rate, up over 25 percent. The number of single-person households rose by 68%, and the 1970 average of 3.1 persons per household has fallen to an average of 2.7 as of 1985. Over half of all households today have only one or two persons in them. Two key factors were primarily responsible for this increase: higher divorce rates and an increase in the average age for first marriages. As a set, these changes indicate that the family of today has a different composition and a different context within which to make consumption choices.

Another key trend affecting family consumption involves the return to a high level of *residential mobility*. Approximately 40 million Americans move each year, for example, and residential mobility brings three primary effects on consumer behavior (Wilkie 1986). First, it shifts market locations for retail purchases. Second, it creates regions of relative growth and regions of relative decline. Third, for the consumers who move, residential mobility creates demand for particular purchases and for the development of new patronage relationships for services. Large financial outlays are required for new housing and costs associated with the move itself. For many consumers, a change of

residence also signals the need for new service providers (banks, insurance, medical care, etc.), new furnishings, appliances and other products to support the new lifestyle. As an example of the magnitude of these demands, Wilkie and Dickson (1985) report that almost one in five (20%) of their national sample of recent buyers of major appliances listed a residential move as the primary motivator for their purchase.

Working Women and Consumer Demand

The accelerated pace at which women have entered the labor force is one of the dominant cultural shifts of modern times. McCall (1986) reports that approximately 60 percent of all people entering the workforce in recent years have been women. While the number of working women has tripled since World War II, the number of working mothers has increased tenfold. Researchers interested in family decisionmaking have attempted to determine the impact of women's employment on product ownership. Several researchers have suggested, for example, that outside employment should increase the demand for time-saving durables. Intuitively, this would be due to two primary factors, less time available for household tasks, and an increase in total household income that enables purchases previously beyond the family's budget.

Examination of the time-saving appliances hypothesis, however, has not provided empirical support. Several studies have found that, when income is held constant and families with working wives are compared to those in which the wife is not employed, no significant differences in ownership for time-saving durables appear. Thus wives' labor force participation appears to be unrelated to both the ownership of these products and the amount spent when purchases are made (Nickols and Fox 1983; Strober and Weinberg 1977; Weinberg and Winer 1983). Total household income, however, is a significant predictor of both ownership and expenditure level for new purchases of time-saving durables (dishwashers, refrigerators, microwave ovens) as well as other durables (Strober and Weinberg 1977, 1980; Weinberg and Winer 1983).

Several plausible explanations of these findings have been raised. Strober and Weinberg (1977) point out that the fact that women's participation in the labor force has become more permanent means that her earnings are a continuing part of a family's resources. Families do not treat husbands' and wives' income differently, and are likely to make their purchase decisions on the basis of a single income total. Also, while it is clear that time pressures are a real accompaniment of a wife's employment, other strategies are available for adapting to this pressure. Working wives can try to buy time by substituting the labor of others (paid help, husband or children), or to save time by becoming more efficient in household tasks, by reducing quality in household production, or to shift time by decreasing leisure activities, volunteer work or sleep (Strober and Weinberg 1980; Fox and Nickols 1983).

Schaninger and Allen (1981), stressed the impact of wives' specific motivations for working. Their three-part classification scheme (non-working wives, those working in lower status occupations, and those employed in higher status positions) revealed that women in lower status positions are more likely to hold primarily economic motivations for work, while those in higher status positions tend to be more career oriented. The lifestyles and consumption patterns of the two working

groups were quite dissimilar (even more dissimilar than either group as compared to the nonworking women). Significant differences were found for a wide variety of product purchases, as well as in shopping behavior and deal proneness.

Thus the set of research on working wives suggests that further dimensions, such as total family income, shifts in lifestyles and activities, and a woman's career orientation, must be added to the simple "employed or not" view of this issue. More broadly, the economic and social trends which have emerged in recent years promise to have major impacts on consumer behavior in the future.

RECENT RESEARCH ON "RELATIVE INFLUENCE"

One of the key historical issues in family research involves identifying the roles and relative influence of various family members in different types of consumer decisions. As reviewed in this section, research has shown that relative influences depend on the product, the stage of the decisionmaking process (e.g., problem recognition vs. choice), and the subdecision under consideration (e.g., when to buy vs. how much to spend).

On a more abstract level, it is useful to identify types of consumer roles enacted within a family buying process. Family members may, for example, stimulate the decision, contribute information, decide on the store, brand or model, purchase and pay for the product, consume or share in the benefits, and/or prepare or maintain the product in operating condition. In addition, many household purchases (e.g., homes, autos, vacations, education, etc.) are sufficiently costly that family finances become an important consideration during purchase. Financial management practices influence savings patterns, resource allocations, and selection of specific products and services.

Family Financial Management

From the earliest studies of financial management, research has shown that substantial variation exists among families in how husbands and wives share responsibilities for bill payment, tracking of expenditures and use of residual funds (e.g., Sharp and Mott 1956; Wolgast 1958; Ferber and Lee 1974; Beutler and Sahlberg 1980; Schaninger, Buss and Grover 1982). A number of economic, sociological and attitudinal factors were identified as accounting for role structure differences in earlier research (Wolgast 1958; Ferber and Nicosia 1972). More recent research has added focus on the impact of sex role attitudes and wife's employment status.

Sex role attitudes may be thought of as arrayed along a continuum from traditional to modern, where "traditional" views reflect sharply dichotomous roles for males and females and "modern" views reflect a greater sharing of roles between the sexes (Rosen and Granbois 1983). The beliefs spouses hold on the importance of a wife's career and sharing of household responsibilities have been found to differentiate patterns of financial management (Schaninger, Buss and Grover 1982). Sex role attitudes have also been found to affect the implementation of financial decisions (e.g., bill payment), but not the manner in which these decisions are actually made (Rosen and Granbois 1983).

A renewed research interest in family financial decision making has recently emerged (Granbois, Rosen and Acito 1986; Hopper 1984). The extent and nature of

family financial planning, patterns of saving and investment as well as determinants of financial decision roles have each been the topic of recent work. However, many issues remain unresolved, and this area merits considerably more research in the future. Important topics include: the relationship between financial planning and consumption decisions, the relationship between family life cycle stages and financial management, the effect of lifestyle factors on financial management, and the success associated with different types of family financial practices.

Relative Influence in Purchase Decisions

The relative influence of husbands and wives in family purchase decisions has received research attention for many years. In the 1950's, researchers found that the specific forms of influence depended on the product under consideration (Wolgast 1958; LeGrand and Udell 1964). In the early 1970's, Professor Harry Davis and his colleagues refined these findings by showing that decision influence also depends on stage in the decision process and the specific subdecision considered (Davis 1970; Davis and Rigaux 1974). In recent years, researchers have extended these findings.

Table 1 reports a representative set of results of this research approach, summarizing Woodside and Motes' (1979) findings (n= 200 families). Beyond the detailed findings, several generalizations can be gleaned:

* *Product differences* are evident, with the wife's influence stronger for carpeting and clothes washers, while the husband's influence is stronger for television sets.

- For each of these products, however, the "average" score (listed in the bottom row) is highest for joint decisions in which the husband and wife bring approximately equal influence. Thus *joint decision-making* is common even for products that appear to be sex-role defined.

- For each of the products, and for every subdecision listed, there is at least one substantial subgroup of families reporting a different influence pattern from the norm. This indicates that *market segmentation* is likely to exist in many situations.

- Although only indicated in a Table footnote, there are *potential measurement difficulties* in this research approach. The results reported reflect the perceptions of both husbands and wives. For all results excepting the six noted in television, patterns were common. The six television results did differ slightly, however, with husbands perceiving higher levels of husband dominance, while wives reported higher levels of joint decision-making.

- Finally, note that an *interesting pattern* emerges as the decision moves from initial consideration stages toward final purchasing. In general, one or the other spouse will tend to dominate the early stages, then the process will shift toward joint decision-making for shopping activities (see also Davis and Rigaux 1974; Bonfield 1978).

With respect to potential segmentation applications, Bonfield's (1978) extension of the Davis and Rigaux study found small but significant differences

in influence patterns of the "traditional couples" in the sample. Schaninger, Buss and Grover (1982) detected significant impacts of sex-role attitudes, with "modern" sex-role families exhibiting increased joint and wife-dominated decisionmaking for household durables. Similar results were also reported by Qualls (1982), in his study of housing purchase decisions. Here "modern" households indicated that seven of eight housing subdecisions (including price, floor plan, location, style and master suite) were joint decisions.

With respect to potential measurement difficulties, several issues merit attention in future research. For example, when the responses of husbands and wives are compared on an aggregate basis, there is little disagreement regarding decision influence. When comparisons are made within families however, a significant proportion of couples (ranging from 10% to 50%) disagree about the influence of one spouse relative to the other for any given decision (Davis 1970; Davis and Rigaux 1974; Burns and Hopper 1986). Researchers have also voiced concern about the potential biasing effects of scales used to assess relative influence (Davis 1976; Szybillo, Sosanie and Tenenbein 1979; Burns and Hopper 1986).

RESEARCH ON FAMILY DECISION PROCESSES

In contrast to research on relative influence, research on family decision processes is a relatively recent development. In advocating a shift toward decision process research, several researchers have recently argued that an overemphasis on the structural aspects of relative influence has delayed our understanding of how the decisions themselves are actually made (Davis 1976; Spiro 1983; Brinberg and Schwenk 1986).

One of the key elements of the decision process approach to family research lies in the recognition that the family members involved in a joint decision may not share the same purchase motives, choice criteria, information, or product preferences. External influences (friends, advertising, etc.) may be differentially experienced as well. Finally, even close familial partners are often unaware of the specific nature of their partner's preferences or choice strategies (Park 1982). These characteristics all set the stage for potential conflict during a joint purchase process.

To date, much of the research concerned with family decision processes has attempted to explain how the partners balance and compromise as they wend their way toward a final decision. Research has focused on assessing the degree of conflict typical in family decisionmaking, strategies of conflict management and spousal use of influence strategies.

Conflict in Family Decisions

Underlying conflict in family decisions appears to be a pervasive phenomenon. In her sample of recent purchasers of a major durable, Spiro (1983) found that a surprising 88% of the married couples reported that they had encountered disagreements during the purchase process and had had to adopt accommodative strategies with their partners! Belch, Belch and Sciglimpaglia (1980) assessed both the level of disagreement and the strategies typically employed to resolve these disagreements, across a variety of product and service decisions. Though the overall levels of disagreement were reported to be low in this study, differences existed across product categories and within process stages.

TABLE 1
MARITAL ROLES IN SEVERAL PRODUCT DECISIONS PRODUCT TYPE / INFLUENCE LEVEL

	Laundry (Washer)			Carpeting			Television		
	Husband	H/W	Wife	Husband	H/W	Wife	Husband	H/W	Wife
Brought Up Idea Of Purchasing	10%	20%	70%	10%	30%	60%	55%	30%	15%
Decided on Style or Type	20	30	50	5	40	55	45	45	15**
Decided on Size	20	30	50	15	45	40	45	45	15**
Decided on Brand	20	40	40	15	45	40	45	45	10**
Decided How Much to Pay	30	45	25	20	55	25	45	45	10**
Obtained Information From Stores	20	55	25	15	55	30	45	45	10**
Visited Stores or Showroom	15	65	20	5	65	30	30	60	10
Decided on Specific Store	30	45	25	15	55	30	45	45	10**
Actually Made Purchase	40	40	20	20	50	30	50	40	10
Average	23%	41%	36%	13%	49%	38%	45%	44%	11%*

SOURCE: Adapted from results presented in Woodside and Motes (1979)

* TO BE READ: "In the instance of a clothes washer, when asked who brought up the idea of purchasing, 10% of families responded that it was primarily the husband, 20% that the husband and wife had approximately equal influence, and 70% that the wife primarily brought up the idea."

** IN THE CASE OF TELEVISION SETS: These items received somewhat different response patterns from husbands than from wives. Numbers here represent approximations.

Subdecisions such as where or when to buy a particular brand or model, for example, stimulated low levels of disagreement. With subdecisions such as the amount of money to spend on a particular product, however, the level of intra-family disagreement noticeably increased.

Typically, families work hard to minimize the effects of disagreements. Recent studies indicate that families seem to rely most heavily upon three problem solving modes to reduce their levels of disagreement. These are: additional search for information, family discussion, and delegation of responsibility to the most knowledgeable family member. However, Belch et al. (1980) report the intriguing observation that children's perceptions of the conflict resolution strategies employed within the home are not the same as their parents'. Moreover, children are not the only family members to perceive conflict resolution from a unique vantage point. In the aforementioned Spiro (1983) study, when partners were asked about the influence strategies which their spouse had employed during the decision, the answers did not come close to matching the actual strategies reported by their partners!

In perhaps the first major study to examine influence strategies, Spiro (1983) discovered five distinct influence styles among the husbands and wives who participated. About 60% of the sample, the *low-level influencers*, reported only infrequent attempts to influence their partners (when attempts were made, moreover, "expert influence strategies" were most employed, in which one spouse tries to convince the partner that he or she is the more knowledgeable, perhaps by presenting detailed information). The second largest segment, at about 20% of the sample, might be seen as *subtle influencers*. These people also rely on an expert influence strategy, but extended this adding a "reward/referent strategy" based on a partner's ability to reward the spouse or to appeal to special feelings of closeness.

The third segment, the *emotional influencers*, were a small (7%) yet distinctive group. These people report a high use of emotional (crying, displays of anger, the 'silent treatment') as well as reward/referent strategies. The fourth segment, *combination influencers* (10%),

employ a variety of strategies with almost equal frequency. This group can be distinguished from the *heavy influencers* (the remaining 7% of the sample) by the fact that they use each of the strategies moderately while the heavy influencers indicate frequent use of each influence type.

Interestingly, Spiro's analysis revealed that a given husband-wife pair was likely to have both partners using the same type of influence strategy. If one spouse did not attempt to resolve disagreements through the use of influence strategies, his(her) spouse was also unlikely to do so. Among the most important discriminators in the Spiro study were age, traditional family ideology, a desire to avoid conflict, and the percentage of income contributed by the wife. However, this husband/wife agreement in strategy orientation does not seem to arise in a conscious manner since, when asked to identify what influence strategies their spouses employed during the purchase decision process, both husbands and wives were unable to accurately do so!

The avoidance of conflict may in fact be one of the most important determinants of the decision process. Thus, while we might assume that joint decisionmaking is a highly rational process, and is characterized by systematic planning and analysis, the evidence seems to suggest otherwise.

Plans And Processes In Family Decisions

Though consistent with respect to conflict, a somewhat different conceptualization of family purchase decisions is advanced in C. Whan Park's (1982) "muddling through" process. Here husbands and wives are seen to have only limited awareness of one another's preferences, and couples move toward a final resolution by stressing simpler, small decisions aimed at avoiding conflicts. Each spouse seems to muddle through the decision process without providing very much information about his(her) own strategies, and without learning very much about his(her) partner's strategies. In Park's study, for example, less than half of the dimensions considered in the purchase decision (for a new home) were common to both partners. Further, little convergence seems to occur as a couple nears a final

choice. However, the couple does not realize that their decision criteria are not very similar. Thus families believe that they come to a decision jointly when in reality they reach a decision through a disjointed, unstructured strategy. In order to help consumers make better decisions for large, complex purchases, Park developed a "decision plan net" approach (Park 1982).

With respect to avoiding conflict, Park discovered three primary heuristics used by the couples in his study. First, spouses attempted early in the decision process to identify some key objective dimensions (price, number of bedrooms) on which they agree: these then became goals that guided the remainder of the process. Second, for characteristics where one partner has particular expertise (i.e., kitchen, plumbing), responsibilities are easily delegated to that partner. Third, concessions are frequently made on the basis of latitude of acceptance factors. For example, if a wife feels that four bedrooms are necessary, while her husband prefers three but considers four acceptable, he will likely concede to her on this point.

The analysis of family decisionmaking processes raises questions which are not immediately obvious or intuitive. Two major themes of recent research, family conflict and husbands' and wives' lack of insight into one another's goals and preferences merit particular attention in future research.

BARRIERS TO THE CONDUCT OF FAMILY CONSUMER RESEARCH

The foregoing discussions have indicated both the importance of this area, and the significant research advances of recent years. However, the topic of family consumer behavior, while recognized as important, remains one of the most under-researched areas in all consumer behavior. Wilkie (1986) has identified six characteristics that help to explain why this is the case:

- *Family decisions are made within a private, intimate social group.* The fact that families constitute intimate social groups means that it is difficult for an external researcher to observe the decision process without biasing it. Also, the intimate nature of the group means that history and nuances of personal relationships will be important parts of the decision context, but again may not be easily available to, or measurable by, the consumer researcher.
- *Families make and spend money continuously.* This characteristic means that time can be a crucial factor, as can the sheer number of purchase and use occasions. It thus becomes difficult to capture all the consumption decisions even for a single family.
- *Family consumption decisions are not independent.* Since resources are typically more limited than family members' desires, resource allocations are necessary. For example, very different options such as a new appliance, vacation travel, or a self-improvement course may compete, with the losing options either deferred or negated.

- *Families have multiple decisionmakers.* This means that a family's purchase decisions range from the personal, individual choices of a single member to truly joint decisions involving any combination of members. Capturing what actually goes on when multiple decision makers are involved, of course, adds a special research challenge to this area of study.
- *Family decisions differ by type of product or service.* To the extent that this pertains to particular issues, valid generalizations are difficult to reach on the basis of research covering only a few products or services.
- *Families differ significantly from each other.* In addition to the individual personalities within them, families differ from each other in terms of wealth, age, social status, lifestyles, number and mix of members, mobility, existing stock of goods, and many other factors. In addition, the decision styles of families differ: for example, some families are patriarchies, others are matriarchies, with others being more egalitarian. Roles for children differ as well. Differences among families make it difficult for a researcher to generalize, even within a relatively circumscribed study.

Given these characteristics, it is perhaps more clear how research difficulties have led this area to be under-researched in consumer behavior. Even so, however, substantial progress has been made, and more is possible.

DIRECTIONS FOR FUTURE RESEARCH

It appears that there are two primary areas in which future research on household consumer behavior is needed. First, much of the actual consumption by households represents functional behavior within the context of their particular lifestyles. These lifestyles in turn have been molded by powerful forces in our culture. One of the most important areas for future research is thus to better specify and examine the relationship between major social, economic and demographic trends and aggregate patterns of household consumption. The consumer research literature as yet does not include discussions of changes which have occurred in aggregate consumption patterns and, in addition the effects these changes have on modes of decisionmaking. Research effort which attempts to conceptualize and then empirically examine these links is particularly needed given the rapidity of social change in recent years.

The second area for future research development involves family decision processes, with special attention to the potentials of conflict resolution theory. Recent research has begun to handle this issue well. Still remaining, however, are further issues of how family members interact with each other in characteristic fashions to reach various purchase decisions. These kinds of topics pose a formidable methodological challenge to future research. For example, Brinberg and Schwenk (1985) recommend that research focus on the process of interaction between spouses involved in a purchase decision. Detailed analysis of these interactions can provide a wealth of useful information

regarding the sequential structure of the decision including responsiveness to one another's point of view, extent of disagreement and adoption of problem solving strategies (see also Bonfield, Kaufman and Hernandez 1984; Buss and Schaninger 1984; Park 1982 for additional suggested approaches).

Another major theme for future research on family decision processes is the relationship between information processing and joint decisionmaking. For example, as noted earlier, recent research has documented a startling lack of insight which spouses seem to have into one another's preferences, goals and decision strategies (moreover, husbands and wives appear to be unaware that they lack this knowledge, and are instead relatively confident of their ability to predict one another's choice criteria (Davis, Hoch and Ragsdale 1986)). Research that ties conflict reduction, motives and strategies to interactive decisions holds particular potential to explain this strange set of affairs. While the tie between information processing and joint decisions has not yet received much attention, it is a natural extension for the growing body of work elsewhere in the field.

Financial management decisions constitute a third area of family decision processes in which future research is needed. For example, little is known about how families decide how to allocate their resources or determine financial priorities. The timing of particular financial decisions and the decision processes involved in selecting financial services are issues of interest to both marketers and families interested in effective fiscal management. Extensive recent growth in the range and complexity of financial service opportunities available to consumers clearly highlights the need for research on this topic.

Overall, there is a substantial need for high quality research on the consumer behaviors of families and households. Significant barriers to research do exist, and many unanswered issues and questions remain. However, we should not lose sight of the fact that a number of new findings and new insights have been reported in recent years. Thus it is clear that considerable progress has been made recently, and that a momentum is present for further research in the future.

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Intergenerational Influences in the Formation of Consumer Attitudes and Beliefs About the Marketplace: Mothers and Daughters

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ABSTRACT

A coorientational model for examining dyadic interaction is advocated for the study of consumer socialization processes. Preliminary results of a pilot study are reported in which mother-daughter dyads were asked to report on a variety of brand preferences, choice rules and marketplace beliefs. Examination of the patterns of intergenerational agreement and accuracy offered tentative insights into the content and depth of consumer socialization. Future research focusing on the processes of socialization is outlined from a coorientational perspective.

INTERGENERATIONAL RESEARCH IN CONSUMER BEHAVIOR

Consumer researchers have only begun to investigate the skills, attitudes, and behaviors that are transferred intergenerationally and the processes by which they are transferred (Moschis 1985). Intergenerational patterns may take a variety of forms, ranging from the sharing of very specific brand preferences to much broader systems of beliefs about how the marketplace functions.

One of the first researchers to address intergenerational issues found that a family's ability or inability to attain their financial goals seemed to be transmitted from one generation to the next (Hill 1970). In a longitudinal study of three generations, Hill reported intergenerational consistencies in the degree to which families preplan their financial actions and then effectively fulfill those plans. Intergenerational similarities were most pronounced at the impulsive or indiscriminate end of the planning spectrum.

In more recent years, researchers have tried to determine what other facets of consumer behavior might be subject to intergenerational influences. In particular, brand preferences, task allocation within the household, perceived risk and opinion leadership have been hypothesized to depend in some measure on intergenerational influences. Arndt (1971, 1972) found a significant pattern of intergenerational agreement between college students and their parents on opinion leadership, innovativeness and favorite store pattern. No such similarities were detected for brand loyalty, perceived product importance or perceived differences among brands.

Woodson, Childers and Winn (1976) were the first to demonstrate that intergenerational influences extend into the realm of brand and product class choices. They observed substantial intergenerational carryover effects in a study examining the purchase of auto insurance. Approximately 32% of their sample of men reported that the insurance company with which they dealt also supplied coverage to their fathers. As expected, the greatest degree of overlap (62%) was reported among men

in their twenties. This proportion fell to 19% for men fifty and older.

In an exploratory investigation (unpublished) that is a forerunner to this research, the present authors conducted a study with college students and their parents to assess the degree of preference similarity in frequently purchased branded goods. The findings revealed a greater than chance degree of intergenerational carryover across a wide range of consumer packaged goods.

Collectively, the research findings on intergenerational carryover indicate that parents and their adult children share in some measure economic management skills and buying styles as well as brand and product preferences. Further research is needed, however, to more completely specify the processes through which intergenerational influence occurs as well as the range of consumer attitudes and skills that are subject to these influences. Reflecting the inherent difficulties involved in studying socialization, little is known about the processes by which parents influence the development of their children's consumer skills and attitudes. New research methods are required to advance our understanding of intergenerational phenomena beyond the simple presence or absence of carryover effects.

RESEARCH PURPOSE AND APPROACH

Although the general purpose of our research is to investigate both the content and processes of consumer socialization, only content issues are addressed here, due to space constraints. The present study focuses on the content of consumer learning among mothers and daughters. The degree to which mothers and daughters share specific brand preferences is investigated as well as their similarity with respect to more overarching beliefs about the marketplace and shopping strategies. Intergenerational carryover was examined across a hierarchical array of variables, allowing a preliminary analysis of the depth of consumer socialization occurring as a result of family influences. At the most specific level of the hierarchy are brand preferences. At increasing levels of generality are choice rules and marketplace beliefs.

Choice rules are decision heuristics or strategies that consumers may use while shopping. Examples include redemption of grocery coupons, reliance on well-known brand names, and response to advertised specials. Marketplace beliefs are beliefs about how the marketplace functions that can be generalized across a variety of product domains. For example, consumers may believe that advertising provides valuable information, that there is a positive relationship between price and quality, that salespeople are generally knowledgeable and that nationally advertised brands are better than store brands. The assumption is that consumers hold implicit theories about how the marketplace operates. These theories or sets of beliefs affect the shopping strategies consumers adopt and ultimately the products they prefer to buy.

The range of the variables enables investigation of the levels at which intergenerational influences are

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operative. Description of these patterns will enhance our understanding of the content of consumer socialization occurring as a result of family influences.

The research approach adopted in this study is based on a dyadic model of communication that may be particularly useful in deepening our understanding of intergenerational phenomena. This approach examines both the extent of intergenerational carryover as well as the effectiveness of communication underlying this carryover.

COORIENTATIONAL MODEL

To understand fully the family's role in consumer socialization requires the use of dyadic or interpersonal research approaches. Since communication or learning involves an exchange of information between two people, it is important that research adopt an interpersonal unit of analysis and conceptualize variables as interpersonal constructs (McLeod and Chaffee 1973). To examine interpersonal relations, McLeod and Chaffee (1972) developed a coorientational model, incorporating variables that an individual-level model omits.

The coorientational model posits three structural relations. Two of these, agreement and accuracy, are employed in the research design. Agreement is defined as the degree of uniformity between two people's cognitions with respect to a particular issue. Accuracy is defined as an individual's ability to correctly state the cognitions of the other person in the dyad.

McLeod and Chaffee (1972) suggested that the influence an individual has on someone else's view of a particular issue cannot be understood adequately through simple measures of agreement (i.e., carryover). Accuracy is viewed as an essential measure of the effectiveness of communication between two people. Agreement is the only measure which has been used in intergenerational research to date. However, it is not a particularly good criterion when used alone, since each individual's cognitions are in some measure the result of unique experiences. Perfect agreement is therefore unlikely even when extensive communication or learning has taken place. Accuracy, on the other hand, is a reasonable indicator of the effectiveness of communication between two individuals. Two measures of accuracy, one for each member of the dyad, are used to investigate the effectiveness of communication. The more two people communicate, the higher the anticipated levels of accuracy (Chaffee and McLeod 1968).

METHOD

A survey was used to investigate intergenerational influences among mother-daughter dyads. Both mothers and daughters completed questionnaires that asked them to report their own preferences and beliefs as well as estimates of their partner's. The mother-daughter dyad, rather than an individual, served as the unit of analysis. Three measures derived from the coorientational model (i.e., agreement, daughter's accuracy and mother's accuracy) were developed for each of the substantive variables.

Sample, Materials and Procedure

Forty-nine female college students and their mothers participated in this study. The students were enrolled in an introductory marketing course at a large Southeastern university. They lived off-campus in apartments or houses and shopped for groceries on a regular basis. Two questionnaires were developed, one

for each member of the mother-daughter dyad. The questionnaires were quite similar; most items were simply reworded to match the respondent. At a series of small group sessions, students completed their questionnaires and provided their mothers' names and addresses. Mother's questionnaires were mailed by the researchers. All questionnaires were returned within two to three weeks of mailing.

Measures

Brand Preferences. Eight common supermarket items were chosen to assess similarity of brand preference: toothpaste, facial tissue, aspirin/pain reliever, peanut butter, spaghetti sauce, canned vegetables, coffee, and frozen juices. The first four were rated as high visibility brands and the remaining four as low visibility brands in a pretest. Visibility refers to the extent to which brands or products are in clear view within the home. Brand names are relatively apparent to family members when products are typically stored or used in their original packaging. It might be expected, all else being equal, that intergenerational agreement and accuracy will be more pronounced among visible than among nonvisible brands.

Mothers and daughters were asked whether they used each of the eight products and to indicate in a free response format the brand they most prefer. They were then asked to predict their partner's usage and preference for the same products. Brand preference agreement was defined as the proportion of identical brands the mother and daughter reported. Brand accuracy was defined as the proportion of correctly identified brand preferences. Two measures, one for high visibility brands and one for low visibility brands, were calculated for each of three variables, i.e., agreement, daughter's brand accuracy and mother's brand accuracy.

Choice Rules. Twenty-five items were constructed to examine the choice rules (i.e., shopping strategies) typically used in grocery shopping. Both mothers and daughters were asked to indicate how often (1=always, 5=never) they used these strategies and to predict how their partner would respond to the same set of items. A factor analysis of their responses yielded a six-factor solution explaining 60% of the total variance. Examination of the varimax rotated factors (see Table 1) suggested the following interpretations: propensity to purchase items on sale, willingness to try new brands, brand loyalty, prepurchase planning, impulsive shopping and lack of reliance on the advice of others. To facilitate interpretation, summary variables were constructed which incorporated only those items with a factor loading of .40 or greater. These summary variables were used in all subsequent analyses. Paired comparisons of mothers' and daughters' responses were used to assess intergenerational agreement and mutual accuracy.

Marketplace Beliefs. Measures of mother-daughter agreement and accuracy for marketplace beliefs were obtained in an analogous manner. Both members of the mother-daughter dyad were asked to indicate their level of agreement (1=strongly agree, 5=strongly disagree) with each of 25 items and to predict how their partner would respond when given the opportunity. The pooled responses of mothers and daughters were used as input into a factor analysis, resulting in a five-factor solution accounting for 46% of the total variance. Examination of the varimax rotated factors shown in Table 1 suggested the following interpretation: belief in positive price-quality relationships, the usefulness of

TABLE 1
FACTOR LOADINGS: CHOICE RULES AND MARKETPLACE BELIEFS

CHOICE RULES	MARKETPLACE BELIEFS
FACTOR 1: PROPENSITY TO PURCHASE ITEMS ON SALE	FACTOR 1: POSITIVE PRICE-QUALITY RELATIONSHIPS
.78 I buy the product that is on sale or promotion	.75 Quality products are made only by well-known companies
.76 I buy the brand that is on sale or that I have a coupon for	.73 Advertised brands are better than those not advertised
.69 I compare two or more brands fairly carefully and buy the one that gives me the best overall value for my money	.62 Products sold at a reduced price are generally of poorer quality
.68 When I shop, I look for the cheapest brand and buy it	.60 The price of a product is generally a good indication of its quality
.64 I carefully compare competing brands on several features	.57 Brand name products are typically better than store brands
.61 I use unit pricing information to determine which brand offers the best value for my money	.51 A well-known brand name is a guarantee of higher quality
.55 I buy products on sale that I would not normally buy	.50 Products on sale are always a bargain
.54 I shop at different stores in order to obtain the best prices	.47 A manufacturer must sacrifice quality to sell its products at prices lower than its competition
.40 I collect grocery coupons and redeem them	FACTOR 2: USEFULNESS OF MARKETER CONVEYED INFORMATION
FACTOR 2: WILLINGNESS TO TRY NEW BRANDS	.81 Salespeople help people to buy products which best fit their needs
.75 When I'm in a store I am likely to reach out and pick up a new product just for the fun of it	.73 Most salespeople are well-informed about the products they sell
.70 I am among the first to purchase new grocery products	.71 Salespeople generally help people to make better buying decisions
.70 I try a new brand that I've seen advertised, just to see if I'll like it	.44 Information from advertising helps me make better buying decisions
.69 I switch among brands just to try something new once in a while	.40 Well-known stores tend to offer better customer service
.55 I buy products whose ads I like the best	FACTOR 3: DISTRUST OF MARKETING PRACTICES
.43 I ask a friend or relative for a recommendation and buy the brand they suggest	.67 Advertising encourages people to buy things they don't really need
.42 I just reach out and pick something on impulse	.57 Many products are not worth the price you have to pay for them
FACTOR 3: BRAND LOYALTY	.55 Salespeople take advantage of consumers who are not very knowledgeable about the products they shop for
.81 When in doubt, I buy well-known brands	.43 Heavily advertised products are generally priced significantly higher than less advertised products of comparable quality
.78 I try to stick to well-known brand names	.42 The same brands tend to be the best year after year
.71 I stick with my preferred brand because I know it's best for me and I'm really satisfied with it	.41 Well-known stores tend to offer better customer service
.70 I buy the brand that I bought the last time without giving it much thought	FACTOR 4: POSITIVE VALUE OF ADVERTISING
.68 When in doubt, I buy more expensive brands because they are usually of higher quality	.58 Most television commercials are fun to watch
FACTOR 4: PREPURCHASE PLANNING	.56 Advertising helps people to buy products which best fit their needs
.71 Before going shopping, I sit down and make a shopping list	.45 Information from advertising helps me make better buying decisions
.68 I read newspaper ads before shopping so that I'll know what the weekly specials are	FACTOR 5: VALUE OBTAINED THROUGH PURCHASE OF PRIVATE LABEL AND SALE MERCHANDISE
.64 I collect grocery coupons and redeem them	.61 A store's own brand is usually a better buy than a nationally advertised brand
FACTOR 5: IMPULSIVE SHOPPING	-.48 Typically, you have to pay a bit more to get the best product
.71 I buy products that I had not intended to before entering the store	.42 Products on sale are always a bargain
.66 I just reach out and pick something on impulse	.41 A manufacturer must sacrifice quality to sell its products at prices lower than its competition
.49 I buy products on sale that I would not normally buy	
FACTOR 6: LACK OF RELIANCE ON THE ADVICE OF OTHERS	
.79 I don't pay much attention to claims made in advertisements	
-.46 I ask a friend or relative for a recommendation and buy the brand they suggest	

NOTE: Only those items with a loading of .40 or greater are reported.

marketer conveyed information, a distrust of marketing practices, a belief in the value of advertising and the value obtained through purchase of sale and private label merchandise. Summary variables were utilized to obtain measures of mother-daughter agreement and mutual accuracy.

RESULTS AND DISCUSSION

Brand Preferences

Brand visibility had a positive influence on both mother-daughter agreement and accuracy for brand preferences, as indicated by mean comparisons. Intergenerational agreement was substantially greater for high visibility brands (49%) than for low visibility brands (31%). Brand visibility also seemed to have a positive influence on both mothers' and daughters' accuracy. Daughters were able to report their mothers' preferences for 57% of the high visibility brands, but this proportion fell to 43% for less visible products. Similarly, mothers accurately predicted their daughters' preferences for 56% of the high visibility brands but had greater difficulty with low visibility brands (46%). It is interesting to note that accuracy measures were consistently higher than agreement. Both mothers and daughters were able to predict one another's unique brand preferences as well as the preferences they shared. Differential agreement and accuracy illustrate the value of a coordinational approach in intergenerational research.

Overall, substantial intergenerational agreement and predictive accuracy was observed for brand preferences among mothers and daughters. These findings support earlier work by the authors which revealed a greater than chance degree of overlap (i.e., carryover) across a wide variety of consumer packaged goods. Researchers have not yet investigated the role of intergenerational influences in the development of more abstract shopping strategies and beliefs about the marketplace. Given the proliferation of brands in the marketplace, it may be that the more enduring lessons learned as a result of family socialization are more strategic than brand preferences. Preferences may shift due to limited availability or changing needs. The choice strategies and belief systems an individual adopts, however, may be less malleable to changing circumstances.

Choice Rules

Pairwise comparisons were used to evaluate mother-daughter agreement and accuracy in predicting one another's choice rules. Means and results of dependent samples t-tests are reported in Table 2. Substantial similarity was apparent in the choice strategies adopted. A concern for value, for example, was shared by mothers and daughters. Though there was great variability among the dyads, within each pair mother and daughter tended to shop for and purchase sales items with approximately equal frequency. Mother-daughter pairs also reported similar patterns of brand loyalty. Both groups indicated that they tend to rely on well-known brand names because they have been satisfied with these products in the past and believe that they are of better quality. Daughters were on the average, however, more willing to try new brands than their mothers were. They reported more frequent impulse purchases and trial based solely on advertising that they enjoyed. Though both mothers and daughters indicated that they were only rarely among the first to purchase new products, mothers were less likely

to be innovators than their daughters. This is not surprising given the substantial differences observed between mothers' and daughters' prepurchase planning. Mothers reported significantly more planning prior to shopping than their daughters. Mothers were more likely to write out shopping lists, redeem grocery coupons and read newspaper ads before shopping. On average, mothers used these strategies to plan their shopping on a regular basis while their daughters reported using them only infrequently.

Mothers' and daughters' relative accuracy in predicting one another's strategies reveals both the extent of learning and the direction of influence between generations. As expected, daughters were more accurate in their predictions than their mothers. Daughters were better able to estimate how frequently their mothers used a variety of specific shopping strategies. For a daughter to learn decisionmaking strategies from her mother, she needs to be well aware of what those strategies are. However, her mother may not be as knowledgeable of her daughters' choice rules. Mother's accuracy depends on the process by which the daughter's skills are learned. When learning has resulted primarily from passive observation, differential accuracy might be expected. However, when learning occurs through direct parent-child communication then both participants learn about one another's strategies and relatively high mutual accuracy might be anticipated.

Daughters seemed to be well aware of how often their mothers shop for sale items, how much they plan their purchases before going grocery shopping and how brand loyal their mothers tend to be. These kinds of activities may be readily observed by the child and are therefore easily learned. Daughters' ability to predict their mothers' decision strategies varied across different choice rules, however. While daughters were able to predict accurately patterns of brand loyalty and planning, they tended to underestimate how often their mothers depend on the advice of others in making their shopping decisions. They seemed to view their mothers as more self-reliant or perhaps knowledgeable than the mothers perceive themselves to be.

Though mothers tended to be well aware of their daughters' proclivity to purchase sale items and brand name products, they did not seem to have a clear picture of other choice strategies their daughters utilize. For example, mothers had difficulty predicting how likely their daughters were to purchase new products. Mothers tended to overestimate both how much planning their daughters do before shopping and how much they rely on others' advice. Perhaps mothers believe they play a greater advisory role than they actually do. Mothers also tended to substantially underestimate how often their daughters purchase products on impulse or on the basis of advertising they find appealing. In general, it seems that mothers viewed their daughters as more conservative or deliberate shoppers than they actually are.

Marketplace Beliefs

In general, mothers and daughters seemed to share fewer generalized beliefs about the marketplace than specific shopping strategies. Mothers appeared to be less trusting of the marketing system than their daughters (see Table 3). They were more likely to question the value of advertising and less willing to assume a positive relationship between price and product quality. Though daughters seemed to have some

TABLE 2
 PAIRED COMPARISONS: CHOICE RULES

	MEANS (STD)		MEAN DIFF.	T	PR > T
	DAUGHTERS	MOTHERS			
<i>AGREEMENT</i>					
1. PROPENSITY TO PURCHASE ITEMS ON SALE	*2.96 (0.63)	2.91 (0.66)	0.05	0.36	0.72
2. WILLINGNESS TO TRY NEW BRANDS	3.45 (0.52)	3.61 (0.56)	-0.16	-1.70	0.10
3. BRAND LOYALTY	2.76 (0.53)	2.72 (0.59)	0.04	0.31	0.76
4. PREPURCHASE PLANNING	3.20 (0.91)	2.58 (1.03)	0.62	2.88	0.01
5. IMPULSIVE SHOPPING	3.23 (0.67)	3.36 (0.69)	-0.13	-0.95	0.35
6. LACK OF RELIANCE ON ADVICE OF OTHERS	3.31 (0.48)	3.19 (0.61)	0.12	1.23	0.22
<i>DAUGHTERS' ACCURACY</i>					
1. PROPENSITY TO PURCHASE ITEMS ON SALE	2.99 (0.76)	2.91 (0.66)	0.08	0.72	0.48
2. WILLINGNESS TO TRY NEW BRANDS	3.77 (0.51)	3.61 (0.56)	0.16	1.79	0.08
3. BRAND LOYALTY	2.74 (0.72)	2.72 (0.59)	0.02	0.15	0.88
4. PREPURCHASE PLANNING	2.72 (1.07)	2.58 (1.03)	0.14	0.82	0.42
5. IMPULSIVE SHOPPING	3.23 (0.74)	3.36 (0.69)	-0.13	-1.00	0.32
6. LACK OF RELIANCE ON ADVICE OF OTHERS	3.40 (0.54)	3.19 (0.61)	0.21	0.07	0.07
<i>MOTHERS' ACCURACY</i>					
1. PROPENSITY TO PURCHASE ITEMS ON SALE	2.96 (0.63)	3.00 (0.72)	-0.04	-0.28	0.78
2. WILLINGNESS TO TRY NEW BRANDS	3.45 (0.52)	3.35 (0.53)	0.10	1.25	0.22
3. BRAND LOYALTY	2.76 (0.53)	2.67 (0.63)	0.09	0.83	0.41
4. PREPURCHASE PLANNING	3.20 (0.91)	2.89 (0.86)	0.31	2.00	0.05
5. IMPULSIVE SHOPPING	3.23 (0.67)	3.65 (0.54)	-0.42	-4.31	0.00
6. LACK OF RELIANCE ON ADVICE OF OTHERS	3.31 (0.48)	3.15 (0.61)	0.16	1.52	0.14

* SCALE: 1=ALWAYS, 5=NEVER

uncertainty about the marketing system, they were significantly more positive than their mothers. They tended to both enjoy advertising and utilize this information in their decisionmaking to a greater extent than their mothers. Mothers and daughters did seem to agree, however, that certain kinds of marketer conveyed information (e.g., that provided by salespeople) are especially useful.

Both mothers and daughters found it more difficult to predict one another's marketplace beliefs than shopping strategies. Though daughters were, on the average, more accurate in their estimates, they still had a relatively difficult time reporting their mothers' beliefs. Daughters substantially underestimated their mothers' disagreement with price-quality statements. They seemed to perceive their mothers as both more optimistic than they are and more optimistic than the daughters are themselves about the relationship between price and product quality. Daughters were also unsure of whether their mothers believed that sale and private label merchandise offers a real value to consumers. In general, daughters seemed to be much more unsure of their mothers views about pricing than other marketing variables.

Daughters were able to report accurately their mothers' views of other aspects of the marketing system including advertising and salespeople. For example, daughters recognized that their mothers do not place as high a value on advertising as they do. However,

daughters generally exaggerate this difference. Daughters correctly indicated that their mothers believe that salespeople are generally helpful and knowledgeable. Beliefs about the usefulness of marketer conveyed information, salespeople in particular, is the one area where mother-daughter agreement and mutual accuracy were high.

Mothers were able to predict accurately their daughters beliefs in only one area. They correctly recognized that their daughters found marketer based information, especially salespeople, to be particularly helpful in making various purchase decisions. Mothers did not, however, have an accurate view of their daughters' beliefs about price-quality relationships, distrust of various marketing practices or the relative value of sale merchandise.

Collectively, the findings seem to indicate that mothers and daughters are more likely to share specific brand preferences and shopping strategies than more abstract beliefs about the marketplace. Perhaps children are more likely to learn consumer skills and attitudes from their parents that are both more specific and can be easily observed. As we might have expected, intergenerational influence seems to flow primarily from parent to child. Relative accuracy indicates both the extent of learning and the direction of influence between generations. Daughters were, on the average, better able to estimate their partners' shopping strategies and marketplace beliefs than their mothers were.

TABLE 3
PAIRED COMPARISONS: MARKETPLACE BELIEFS

	MEANS (STD)		MEAN DIFF.	T	PR > T
	DAUGHTERS	MOTHERS			
<i>AGREEMENT</i>					
1. POSITIVE PRICE-QUALITY RELATIONSHIP	*3.54 (0.49)	3.68 (0.58)	-0.14	-1.51	0.14
2. USEFULNESS OF MARKETER CONVEYED INFORMATION	2.64 (0.54)	2.63 (0.74)	0.01	0.09	0.93
3. DISTRUST OF MARKETING PRACTICES	2.55 (0.55)	2.16 (0.52)	0.39	4.41	0.00
4. POSITIVE VALUE OF ADVERTISING	2.35 (0.56)	2.74 (0.77)	-0.39	-2.89	0.01
5. VALUE OBTAINED WITH PRIVATE LABEL AND SALE MERCHANDISE	3.25 (0.48)	3.17 (0.55)	0.08	0.97	0.34
<i>DAUGHTERS' ACCURACY</i>					
1. POSITIVE PRICE-QUALITY RELATIONSHIP	3.20 (0.68)	3.68 (0.58)	-0.48	-4.81	0.00
2. USEFULNESS OF MARKETER CONVEYED INFORMATION	2.79 (0.71)	2.63 (0.74)	0.16	1.31	0.20
3. DISTRUST OF MARKETING PRACTICES	2.26 (0.50)	2.16 (0.52)	0.10	0.97	0.34
4. POSITIVE VALUE OF ADVERTISING	3.05 (0.80)	2.74 (0.77)	0.31	2.44	0.02
5. VALUE OBTAINED WITH PRIVATE LABEL AND SALE MERCHANDISE	2.74 (0.61)	3.17 (0.55)	-0.43	-4.51	0.00
<i>MOTHERS' ACCURACY</i>					
1. POSITIVE PRICE-QUALITY RELATIONSHIP	3.54 (0.49)	3.05 (0.86)	0.49	3.58	0.00
2. USEFULNESS OF MARKETER CONVEYED INFORMATION	2.64 (0.54)	2.80 (0.89)	-0.16	-1.10	0.28
3. DISTRUST OF MARKETING PRACTICES	2.55 (0.55)	2.19 (0.56)	0.36	3.30	0.00
4. POSITIVE VALUE OF ADVERTISING	2.35 (0.56)	2.69 (0.90)	-0.34	-2.35	0.02
5. VALUE OBTAINED WITH PRIVATE LABEL AND SALE MERCHANDISE	3.25 (0.48)	2.96 (0.63)	0.29	2.78	0.01

* SCALE: 1=STRONGLY AGREE, 5=STRONGLY DISAGREE

FUTURE RESEARCH DIRECTIONS

The coorientational model may be particularly useful in broadening our understanding of the processes by which preferences and attitudes are transmitted from one generation to the next. Socialization researchers have attempted to define the relevant learning processes in conceptual terms but appropriate methods have not yet been applied in empirical studies.

Ward, Wackman and Wartella (1977) identified three primary ways in which parents influence their children's consumer socialization. Parents may: (1) act as models, (2) directly interact with their children in a variety of consumption related contexts, or (3) provide children with independent opportunities for purchasing. Learning thus occurs through modeling (observation), direct communication and experience, respectively.

The effects of particular socialization processes may be reflected in the various patterns of overlap observed between parents and their adult children as well as their ability to predict accurately one another's preferences and beliefs about the marketplace. While measures of agreement may provide an index of intergenerational carryover, such measures indicate little

about the learning processes that underlie intergenerational influence. An individual's accuracy, on the other hand, may indicate the relative role of learning by observation, communication and experience. An example of how the coorientational model might be used to investigate observational learning (i.e., modeling) in the development of shared brand preferences is described below.

In the absence of direct communication about consumption, children learn their parents' preferences through parental modeling. For modeling to occur, children need to be able to observe parental behaviors that provide useful or diagnostic information about the brands they prefer. Children therefore learn their parents' preferences through observation of the brands they select and consume. Thus, brand visibility (such as a ketchup bottle on the family dinner table) is a necessary condition for modeling to take place. When learning has been primarily the result of modeling, a daughter's accuracy in predicting her mother's preferences will be relatively high while her mother's accuracy will be relatively low. In order for the daughter to be influenced, she must be aware of her mother's preferences. However,

if the daughter is learning through observation, there is little reason to expect that the mother would be aware of her daughter's preferences. When there is little mother-daughter communication about consumption and limited involvement on the part of the child in family purchasing, a child has little opportunity to learn except through observational means. The relative impact of observational learning may decline substantially when there are other means by which consumer preferences can be transmitted.

The relative contributions of each of the three learning processes are currently being investigated in a study of intergenerational influence among mothers and daughters. The key independent variables in this study are brand visibility, mother-daughter communication about consumption and daughter's shopping experience. These factors were selected as indicators of the primary learning processes, i.e., observation, communication and experience. Coorientational measures of agreement and accuracy will be used to examine the relative impact of each of these learning processes in the development of brand and product preferences, choice rules and marketplace beliefs. Through the use of approaches such as the coorientational model, researchers may develop a better understanding of both the content and processes of consumer socialization.

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The Measurement and Moderating Role of Confidence in Attributions

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Abstract

Although attribution theory explicitly recognizes the role of both the extremity and confidence with which an attribution is made, consumer researchers have largely failed to explicitly consider attribution confidence in their studies. It has been suggested that attribution confidence may moderate the relationship between attribution extremity and subsequent decision-making processes. If this suggestion has validity, then the relationships reported between attributions and related constructs may be attenuated. The present study employs three alternative measures of attribution confidence in investigating the moderating role of attribution confidence on attribution extremity-attribution outcome relationships. Directional support for two of these three measures as moderating variables was found.

Introduction

Attribution theory "has to do with the processes by which man 'knows' his world and, more importantly, knows that he knows, that is, has a sense that his beliefs and judgements are veridical" (Kelley 1973, p.107). Consistent with Kelley's perspective, there are two dimensions of an attribution: the extremity of the attribution and the confidence with which it is made. This two-dimensional perspective is also consistent with correspondent inference theory (Jones and Davis 1965). For example, in making correspondent inference (i.e., trait) attributions, the observer's confidence that the actor is extreme on a trait represents the strength of the correspondent inference attribution.

Despite the theoretical importance of attribution confidence, consumer attribution researchers have generally failed to incorporate measures of attribution confidence into their attribution operationalizations. Instead, attribution confidence is most often omitted from attribution studies (e.g., Settle and Golden 1974; Smith and Hunt 1978; Sparkman and Locander 1980), or it is measured but treated solely as a dependent variable. In general, the effect of confidence on the relationship between attribution extremity and other variables is ignored (e.g., Calder and Burnkrant 1977). At this point, the implications of not assessing attribution confidence, or treating it solely as a dependent variable, are unknown.

Attribution Extremity - Confidence Measurement

Extremity in attribution has usually been measured by the degree to which a subject responds toward one of the anchors on bipolar adjective scales (e.g., sincere-insincere (cf. Calder and Burnkrant 1977)), or similarly, toward one of the anchors on internal-external attribution scales (cf. Mizerski 1975). Extremity also has been measured as the degree to which subjects respond toward the probable anchor of a probable-improbable attribution scale (cf. Lichtenstein and Bearden 1986), or the degree to which subjects assign a high percentage probability on an ipsative causal allocation scale (cf. Mizerski 1978). When consumer researchers have measured attribution confidence, the measures have primarily consisted of subjects' self-reported confidence on a

"confident-not confident" scale (cf. Calder and Burnkrant 1977; Mizerski 1975).

One school of thought is that the confidence with which an attribution is made is captured by the extremity of response to an attribution scale; that is, as we are more extreme in our attributions, we are also more confident. Therefore, confidence measures are not needed because they are redundant with measures of attribution extremity. However, a second school of thought is that the confidence with which an attribution is made is not totally captured by the extremity of response to an attribution scale. Mizerski, Golden, and Kernan (1979) have hypothesized that higher attributional confidence may result in a higher probability of actions resulting from attributions. If this hypothesis has merit, failure to explicitly measure confidence may result in an attenuation of relationships of attributions with both antecedent and outcome variables. In other words, attribution confidence may moderate the impact of information on attribution extremity. Also, consistent with the hypothesis of Mizerski et al. (1979), it may moderate the impact of attributions on outcomes such as subsequent perceptions, attitudes, and behavior¹.

The purpose of the present study is to address the following two questions: (1) do measures of attribution extremity fully reflect attribution confidence, and (2) if not, does attribution confidence moderate the relationship between attribution extremity and subsequent cognitions. A necessary condition for evidence of attribution confidence acting as a moderator variable is that attribution extremity measures not totally encompass attribution confidence. Therefore, positive evidence pertaining to the second question above will also serve as negative evidence for the first question. A study is described in which three different measures of attribution confidence are used and the moderating role of confidence on the relationship between attribution extremity and attribution outcomes is investigated for its consistency with theoretically-based hypotheses. (Because the substantive meaning of the hypotheses are not at issue here, but rather, are provided as only a theoretical basis for testing for moderating relationships, the hypotheses are provided after the measures are discussed.) Results are discussed and implications for attribution research are provided.

Attribution Extremity Measurement

One of the most common methods of measuring attribution extremity is by the use of independent rating scales. Independent rating scales are multi-item scales in which a response to one scale-item does not preclude any response to another scale-item. Attribution extremity has been measured via independent rating scales in the following three ways: (1) the degree to which subjects responded toward either anchor on bipolar trait

¹ Although attribution theory only specifically addresses the process of information input to attribution output, the impact of attributions on subsequent decision making processes is a natural extension (Bem 1972; Kelley 1973; Mizerski et al. 1979).

attribution scales (cf. Calder and Burnkrant 1977), (2) through the use of internal-external attribution scales (Mizerski 1975), and (3) the degree to which subjects respond toward the probable anchor on probable-improbable scales (cf. Lichtenstein and Bearden 1986). There is evidence which suggests that independent rating scales are more reliable and valid than open-ended and ipsative methods of measuring attribution extremity (Elig and Frieze 1979). Consequently, independent rating scales are used in the present study to measure attribution extremity.

Self-Report Measure of Confidence

Calder and Burnkrant (1977) asked respondents to make twenty-seven trait extremity attributions on semantic differential scales. Following the twenty-seven scales, a single confidence scale was employed to assess average confidence for all twenty-seven attributions. This confidence measure may not accurately reflect the confidence of those who make different attributions with varying degrees of confidence. However, because of its previous use, it is employed here.

Cognitive Conflict Measures of Confidence

There appears to be support in the literature for two cognitive conflict-based measures of confidence: a measure of causal complexity (Mizerski 1978), and a measure of response latency (Aaker et al. 1980; Tyebjee 1979). Cognitive conflict occurs when an individual experiences competing cognitions. As the number and/or equality (in terms of strength) of competing cognitions increases, cognitive conflict also increases. As conflict increases, individuals should feel less strongly about any particular cognition. Thus, confidence in any particular cognition decreases, and therefore, measures of cognitive conflict can be taken as indicators of confidence (Tyebjee 1979).

Causal complexity refers to a perceiver's attribution allocation among various possible causes. The assumption inherent in using causal complexity as a measure of confidence is that those individuals who: a) recognize more possible causes of an event, and b) weigh potential causes equally with respect to causal probability, are more causally complex, and thus, are less confident in their attribution allocation (Mizerski 1978). Holding condition "a" constant enables a causal complexity score to be calculated as a respondent's dispersion of causal probability assignments across a given number of possible attributions². For example, an individual responding that five possible attributions had an equal 20% chance of being the cause of an effect would be of high causal complexity, and thus should have low confidence in any particular attribution. Conversely, an individual who responded that potential cause A had a 96% chance of being the cause, while potential causes B, C, D, and E each had a 1% chance, would be of low causal complexity and should have high confidence in cause A (Mizerski 1978).

Using a set number of probable-improbable scales across respondents to measure attributions, individuals of high causal complexity can be classified as those who

respond to many attribution scales with equal probability. These individuals cannot discriminate which attributions are more likely vis-a-vis the other attributions, and therefore, should have less attribution confidence. However, a person of low causal complexity would be one who responded to some attributions as very probable, and to others as very improbable. These individuals can discriminate probable from improbable causes, and therefore, should show more confidence in their attributions.

The second cognitive conflict measure, response latency, is typically defined as the time it takes a subject to make a response (Tyebjee 1979). The assumption inherent in using response latency as a conflict-based measure of confidence is that those individuals with low conflict are more confident of their responses, and thus, respond quicker. Support for this assumption has been found by Tyebjee (1979) and Aaker et al. (1980).

These two conflict-based measures have the desirable property of being "maximally different" from the method used to measure attribution extremity. In addition, all three methods of assessing attribution confidence, the single self-report measure, the response latency measure, and the measure of causal complexity, appear to have the desirable property of being "maximally different" from each other.

Method and Hypotheses

Study Procedure

Two hundred and seventy-eight undergraduate business majors at a large state university were randomly assigned to cells in a 2x2x3 laboratory experiment. Because of no-shows, cell sizes ranged from 21 to 28. Manipulations included the consistency with which an advertising merchant made a cash discount claim (high-low), the distinctiveness of the claim vis-a-vis competitors (high-low), and the level of discount (high-medium-low). Measured variables included consumer attributions for the merchant-advertised discount claim, the confidence with which the attributions were made, and also the perception of the value of the advertised deal and attitude towards the deal. Because the purpose of the present study is to investigate relationships between attribution extremity, attribution confidence, and attribution outcomes, the manipulations will not be discussed further. Rather, the analyses are performed within each of the experimental cells in order to obtain results that are unaffected by the manipulations.

Twenty-four experimental sessions were conducted; two each for each of the twelve treatment conditions. Similar to procedures employed by Aaker et al. (1980), upon entering a computer laboratory, subjects were seated at individual desks, each with an IBM personal computer. Subjects were told that they were going to be participating in a study designed to get their reactions to an advertisement that Dawson's Furniture Store (fictitious), a store in another state, was considering for use in the upcoming months. They also were told that the study was being conducted in their city rather than the city where the furniture store operated because the furniture store wanted to take every precaution to maintain its anonymity among potential customers. Subjects were informed that although the store name in the advertisement was changed to add further insurance of anonymity, everything else in the advertisement was factual (i.e., exactly as the advertisement would be used).

² The number of competing alternatives has also been held constant in other studies of cognitive conflict. For example, in the Tyebjee (1979) and Aaker et al. (1980) studies, subjects' response latency scores were measured by the time it took subjects to choose between two and five brand alternatives, respectively.

TABLE 1
ATTRIBUTION MEASURES AND FACTOR LOADINGS

	Person	Product	Circum- stance
1. To stimulate new business, that is, attract new customers.	<u>.37</u>	-.12	.15
2. Because of an approaching deadline to meet a sales quota.	.14	-.09	<u>.60</u>
3. Because these desks have been in the showroom too long.	.00	.08	<u>.73</u>
4. Because of an oversupply of this particular desk model.	.03	.04	<u>.74</u>
5. Because the dealer received a special deal from the manufacturer.	<u>.47</u>	.18	.08
6. Because the store wants to avoid paying inventory tax.	.04	.14	<u>.52</u>
7. Because of a poor assortment of remaining desks.	-.16	<u>.36</u>	.17
8. To make the consumer aware of the desks.	<u>.60</u>	-.28	.02
9. To make the customer think that he/she is getting a good deal.	<u>.69</u>	.00	-.01
10. To sell inventory to avoid the high carrying costs of inventory.	.24	.12	<u>.50</u>
11. To meet the continued competition that exists in the industry.	<u>.42</u>	-.11	-.14
12. Because the desk is unpopular.	-.13	<u>.69</u>	.14
13. Because of the desire to create an image as a frequent "furniture discounter."	<u>.55</u>	.21	-.21
14. Because the desk model is being discontinued.	.06	<u>.67</u>	-.13
15. Because there was a factory closeout on this desk model.	.29	<u>.66</u>	-.08
16. Because the desk is of poor quality.	-.31	<u>.69</u>	.05
17. Because the desk would not sell at a higher price.	.09	<u>.56</u>	.13
18. Because the retailer purchases in volume and therefore can pass the savings on to the customer.	<u>.46</u>	-.02	.01
19. To build customer goodwill.	<u>.51</u>	-.21	.08
20. To try and attract the price sensitive market.	<u>.72</u>	.00	-.01
21. Because the desk is an awkward size and shape.	-.26	<u>.58</u>	.13

After exposure to the test advertisement and the manipulations, subjects were told that their feelings about why the store was offering this discount were of interest. Instructions and sample questions were provided both verbally and on the computer before the actual study questions were presented. After all subjects were comfortable with the computer questionnaire procedure, they were allowed to begin.

Study Variables

Attribution Extremity: Subjects responded to thirty-six probable-improbable attribution extremity scales in response to the question, "Why do you think Dawson's furniture store is offering this price deal?" The thirty-six attribution extremity items (shown in Table 1) were determined using the two-step procedure suggested by Elig and Frieze (1979) and Weiner (1985). First, a pretest sample of 66 undergraduate business majors provided reasons why a furniture store might offer a discount on a desk. Thirty-six distinct responses were obtained. These responses were then converted to probable-improbable scales for this study.

The attribution extremity scales were presented one at a time on the computer monitor. Subjects responded to a low probability attribution by depressing a low number key and a high probability attribution by depressing a higher number key. Keys 1 through 9 were used; thus the scale had nine-places. As soon as subjects responded to a particular attribution, both their attribution extremity response (i.e., keys 1 through 9) and their response time (in seconds) were recorded on a data diskette, and the next attribution extremity scale appeared on the screen.

Extremity responses to the thirty-six items were subjected to a principal components analysis to reduce the number of variables to a more manageable size for testing for the moderating role of confidence. Based upon

Kelley's (1973) contention that person, stimulus, and circumstance attributions exhaust the causal space (i.e., any cause of an effect must be due to at least one of these three factors), and the empirical support for this taxonomy found by Lichtenstein and Bearden (1986), three factors were extracted³. Items not showing evidence of simple structure were deleted and the remaining items were reanalyzed. The resulting structure consisted of the twenty-one items shown in Table 1. Consistent with Kelley's (1973) contention and the findings of Lichtenstein and Bearden (1986), it does appear that the factors can be interpreted as person, product (stimulus), and circumstance factors, respectively. As such, person, product, and circumstance attribution extremity variables were operationalized by creating summed scales of the respective attribution extremity items (cf. Lichtenstein and Bearden 1986; Sujana 1986). The correlation between the summated product attribution extremity scale and the summated person and circumstance attribution extremity scales was -.15 and .15, respectively. The correlation between the latter two scales was .03. Descriptive statistics and reliability estimates for the attribution extremity scales, as well as other study variables, are provided in Table 2. The reliability for the three attribution extremity scales of .70, .74, and .64, respectively, are consistent with those obtained for attribution constructs in other studies (Sujana 1986).

Attribution Outcomes: The attribution outcome variables were perceptions of the value of the deal offered in the advertisement and attitude towards the deal. The perceived value of the deal was operationalized using four

³ A common exploratory factor analysis using a varimax rotation was also conducted with no substantive differences in structure.

TABLE 2
DESCRIPTIVE STATISTICS AND RELIABILITY
ESTIMATES FOR STUDY VARIABLES

Variable	# of Items	Range ^a	Mean	SD	Coef. Alpha
<i>Attribution Extremity</i>					
Person	9	15-79	53.77	10.45	.70
Product	7	9-59	31.50	9.10	.74
Circumstance	5	10-43	26.18	6.81	.64
<i>Attribution Confidence</i>					
Self Report	1	1-9	6.58	1.58	—
Causal Complexity	1	.94-3.70	2.20	.48	—
Person Latency	9	16-187	73.44	22.23	.64
Product Latency	7	9-106	48.28	17.11	.57
Circumstance Latency	5	17-96	44.23	16.29	.54
<i>Attribution Outcomes</i>					
Perceptions	4	7-36	21.63	5.73	.80
Attitude	5	7-45	28.36	8.28	.92

^a Coding procedures resulted in higher scores reflecting higher values of the variables.

nine-point semantic differential scales reflecting the dimensions of perceived worth, perceived savings, price acceptability, and value for the money. Attitude towards the deal was measured using five nine-point semantic differential scales (e.g., favorable-unfavorable, good-bad). The correlation between the two variables was .77. Coefficient alpha for these two variables were .80 and .92, respectively.

Attribution Confidence: Three methods of measuring attribution confidence were employed. Similar to the measure employed by Calder and Burnkrant (1977), a single, self-report confidence in attribution scale was placed after the thirty-six attribution extremity scales. Specifically, the scale was "In general, how confident are you in the answers you just provided?" anchored by "very confident-not at all confident."

The second method of measuring confidence was a single measure of causal complexity. This measure was not a direct one, but rather, was derived by calculating the dispersion of responses to the attribution extremity scales. Specifically, causal complexity was calculated as an individual's standard deviation across all thirty-six attribution extremity scales⁴.

The third confidence measure method was a response latency measure which assessed the time interval in seconds from the time that the attribution extremity measure appeared on the computer monitor until the time at which the subject depressed a key to respond to the extremity measure. This time interval was recorded directly on the data diskette; thus the latency measure was unobtrusive. A separate latency score for

each of the three summated attribution extremity scales was calculated by summing individual latency scores for those items that loaded on each of the three attribution extremity factors. Therefore, there was a person latency score comprised of response times for nine items, a product latency score comprised of response times for seven items, and a circumstance latency score comprised of response times for five items. The reciprocal of each latency scale was then calculated and used as the response latency measure to make the direction of latency scores comparable with other confidence measures (i.e., higher scores reflecting higher levels of confidence). Coefficient alpha for these three scales was .64, .57, and .54, respectively.

Hypotheses

The primary purpose of this study concerns the role of attribution confidence as a moderator of the relationship between attribution extremity and attribution outcomes. However, a necessary condition for a moderator variable is that there be a relationship to moderate; in this case, this concerns the significance of the relationship between attribution extremity and outcomes. The first set of hypotheses pertain to this necessary relationship between attribution extremity and outcomes.

In the present study, subjects were asked to make attributions for the reason that the furniture dealership was offering a price discount on the advertised desk. It appears plausible to suggest that any product attribution should imply something negative about the desk in order to justify the discount. An examination of the items that loaded on the product factor in Table 1 reveals that these items do suggest something negative about the desk. Therefore, product attribution extremity should be negatively related to the two attribution outcome variables, perceptions of the value of the deal and attitude towards the deal.

Person attributions, on the other hand, imply nothing about the quality of the desk itself, but rather, reflect the motives of the dealership in day-to-day business operations. The items that loaded on the person attribution extremity factor in Table 1 appear consistent with this explanation; the items appear to describe various motives of the dealer. Because the dealership is offering a discount, and the discount is not attributed to an inferior product, person attribution extremity should be positively related to attribution outcomes.

Circumstance attributions have been viewed as a residual category used by observers when person or stimulus attributions are not appropriate. As such, some researchers have called circumstance attributions nothing more than "a confession of ignorance" (Jones and Davis 1965). A review of the items that loaded on the circumstance factor in Table 1 reveal that some appear to imply something negative about the desk (i.e., items 3 and 4), while others do not (i.e., items 2, 6 and 10). Given the conjecture of Jones and Davis (1965) and Jones and McGillis (1976), and the nature of the items comprising the circumstance extremity factor, it seems plausible to suggest that circumstance attribution extremity should not be related to attribution outcomes, and as such, not moderated by attribution confidence.

Based on the above explanations, the following three hypotheses are offered for the impact of attribution extremity on attribution outcomes:

⁴ Although only 21 of the items loaded on the three factors, items that did not load should still affect causal complexity in the hypothesized manner. Thus, all 36 were used to calculate the causal complexity-based measure of confidence.

H1: Product attribution extremity will have a negative effect on attribution outcomes.

H2: Person attribution extremity will have a positive effect on attribution outcomes.

H3: Circumstance attribution extremity will not affect attribution outcomes.

The effect of attribution extremity on the attribution outcomes should be stronger when confidence is high. For example, if a perceiver believed that a price discount was due to an inferior product, for a given level of extremity, the product attribution should have a stronger negative impact on attribution outcomes under higher levels of confidence. Consequently, hypotheses concerning the moderating role of attribution confidence are offered below.

H4: The impact of product attribution extremity on attribution outcomes is moderated by attribution confidence.

H5: The impact of person attribution extremity on attribution outcomes is moderated by attribution confidence.

H6: The impact of circumstance attribution extremity on attribution outcomes is not moderated by attribution confidence.

Moderated Regression Analysis

Moderated regression analysis was used to test whether attribution confidence was a significant moderator of the relationship between attribution extremity and attribution outcomes (Sharma, Durand, and Gur-Arie 1981). Moderated regression analysis is based on a comparison between the following regression equations:

$$y = a + b_1x \quad (1)$$

$$y = a + b_1x + b_2z \quad (2)$$

$$y = a + b_1x + b_2z + b_3xz \quad (3)$$

where y is the dependent variable, a is a constant, x is the hypothesized predictor variable, and z is the suspected moderator. If partial F -tests reveal a significant difference between equations 2 and 3, z is a moderator variable.

In terms of the present study, if attribution confidence moderates the attribution extremity-attribution outcome relationship, higher levels of attribution confidence should result in a stronger attribution extremity-attribution outcome relationship. For product attributions (H4), this means that the b_3 in equation 3 should be negative. For person attributions (H5), b_3 should be positive. For circumstance attributions (H6), it should not be significant.

In order to avoid manipulation-caused effects on the study variables, twelve different moderated regression analyses were performed (one within each of the twelve

experimental conditions) using each of the outcome measures as dependent variables. The results of the moderated regression analyses are reported in Tables 3 and 4. Each row of the table represents a summary of the twelve different moderated regression analyses, one for each experimental cell⁵. The attribution extremity column in Table 3 corresponds to the direction and significance of t -values associated with b_1 in equation 1, the confidence column corresponds to the direction and significance of t -values associated with b_2 in equation 2, and the interaction column corresponds to the direction and significance of t -values associated with b_3 in equation 3.

For example, equation A in Table 3 is read as follows: person attribution extremity had a positive effect on the dependent variable, perceptions of the value of the deal, in 11 of the 12 conditions, and a negative effect on perceptions in only 1 of the 12 conditions. In 3 of the 11 cases in which there was a positive effect, the effect was significant at the .05 level. The average adjusted R^2 across all 12 conditions was .12. When self-report confidence was added to the equation, in 5 of the 12 conditions it had a positive effect on perceptions, in 7 of the 12 conditions it had a negative effect, and none of these effects were significant. The average adjusted R^2 across all 12 conditions was .18. When the interaction between person attribution extremity and self-report confidence was added to the equation, in 8 of the 12 conditions, the effect was positive (with $p < .05$ for two of the conditions), and in 4 of the 12 conditions, the effect was negative. The average adjusted R^2 across all 12 conditions when all three terms are in the equation is .27. Because pattern of results are very similar across both dependent variables, for the sake of brevity, the results reported in Tables 3 and 4 are discussed jointly.

A theoretically consistent pattern of results is evident for the attribution extremity-attribution outcome relationship (equation 1) across both outcome variables. That is, product attribution extremity had a negative impact on outcomes (H1 supported), person attribution extremity had a positive impact on outcomes (H2 supported), and circumstance attribution extremity did not affect attribution outcomes in a directionally consistent manner (H3 supported). Further, in those experimental conditions in which attribution extremity had a significant effect, with the exception of the one significant effect of circumstance extremity on attitude, the significance was always in the hypothesized direction for both dependent variables. In sum, the results provide support for the first three hypotheses.

To test if the relationships between attribution extremity and attribution outcomes are moderated by any of the three attributional confidence measures, the individual confidence measures (as indicated by equation 2) were added to the regression equations, followed by a confidence by attribution interaction (as indicated by equation 3). If higher levels of confidence result in a stronger attribution-attribution outcome relationship, a

⁵ Pooling data across experimental cells for an overall moderated regression analysis would have aided in the interpretation of results. However, results of the within cell moderated regression analyses revealed differences in the beta coefficients across experimental cells; thus, a pooled analysis across cells would have been inappropriate. For this reason, the data are presented in a within-cell, rather than across-cell, framework.

TABLE 3
MODERATED REGRESSION ANALYSIS SUMMARY OF POSITIVE (SIGNIFICANT POSITIVE)/NEGATIVE (SIGNIFICANT NEGATIVE) T-VALUES WITHIN TWELVE CONDITIONS FOR THE IMPACT OF ATTRIBUTION EXTREMITY ON PERCEPTIONS AS MODERATED BY CONFIDENCE(a)

Equation	Attribution Extremity Variable (X)			VARIABLE ADDED						
	Person	Product	Circum-stance	Avg. R ²	Self Report	Causal Complexity	Response Latency	Avg. R ²	Interaction Variable (XZ)	R ²
A	11(3)/1			.12	5/7			.18	8(2)/4	.27
B		1/9(c)(4)		.13	5/7			.18	3/9(2)	.28
C			5/7	.04	5(1)/6(c)(1)			.12	6/6(1)	.17
D	11(3)/1			.12		6(1)/6		.18	9/3	.24
E		1/9(c)(4)		.13		7(1)/5		.20	4/8(2)	.27
F			5/7	.04		6(1)/6		.12	4/8	.16
G	11(3)/1			.12			5/7(1)	.17	7/5(1)	.22
H		1/9(c)(4)		.13			5/4(c)(1)	.18	6/6	.20
I			5/7	.04			6/6	.08	3/9	.13

(a) criterion of statistical significance is $p < .05$.

(b) Table entries are interpreted as follows. For equation A, the impact of person attributions on perceptions was positive in 11 (and 3 significantly so) of the experimental cells, and negative in one of the experimental cells. When the self-report measure of confidence was added to the regression equation, confidence had a positive effect on perceptions in 5 of the cells and a negative effect in 7 of the cells, yet none of these effects were significant. When an interaction between the person attribution and self-report confidence measures was added to the equation, it had a positive effect in 8 (2 significantly so) of the experimental cells, and a negative effect in 4 experimental cells.

(c) zero t-values resulted in the number of positive and negative effects not summing to twelve.

TABLE 4
MODERATED REGRESSION ANALYSIS SUMMARY OF POSITIVE (SIGNIFICANT POSITIVE)/NEGATIVE (SIGNIFICANT NEGATIVE) T-VALUES WITHIN TWELVE CONDITIONS FOR THE IMPACT OF ATTRIBUTION EXTREMITY ON ATTITUDES AS MODERATED BY CONFIDENCE(a)

Equation	Attribution Extremity Variable (X)			VARIABLE ADDED						
	Person	Product	Circum-stance	Avg. R ²	Self Report	Causal Complexity	Response Latency	Avg. R ²	Interaction Variable (XZ)	R ²
J	11(4)/1			.12	9(3)/3			.20	6(3)/6	.28
K		1/10(c)(4)		.15	8(2)/4			.21	3/9(3)	.28
L			4/8(1)	.07	9(3)/3			.14	6/6(1)	.17
M	11(4)/1			.12		7/5		.16	10(1)/2	.23
N		1/10(c)(4)		.15		8/4(1)		.19	2/10(1)	.24
O			4/8(1)	.07		9/3		.12	5/7	.15
P	11(4)/1			.12			4/8	.14	5/7	.16
Q		1/10(c)(4)		.15			7/5	.18	5/7	.22
R			4/8(1)	.07			5/7	.07	5/7	.14

(a) criterion of statistical significance is $p < .05$.

(b) Table entries are interpreted as follows. For equation J, the impact of person attributes on attitudes was positive in 11 (and 4 significantly so) of the experimental cells, and negative in 1 of the experimental cells. When the self-report measure of confidence was added to the regression equation, confidence had a positive impact on attitudes in 9 of the experimental cells (3 significantly so), and a negative impact on attitudes in 3 of the cells. When an interaction between the person attribution and self-report confidence measures was added to the regression equation, it had a positive effect on attitudes in 6 of the experimental cells (3 significantly so), and a negative effect on attitudes in 6 of the experimental cells.

(c) zero t-values resulted in the number of positive and negative effects not summing to twelve.

positive person by confidence and a negative product by confidence interaction should result.

There appears to be a theoretically consistent pattern of directional support for the moderating impact of the self-report and causal complexity confidence measures. Results are consistent for person attribution extremity on both outcome measures (perceptions and attitude), and product attribution extremity on both outcome measures, with a single exception (equation J in Table 4). For this single situation in which directional support was not found, the three significant interaction effects were all in the hypothesized direction. In fact, for all situations in which product and person attribution extremity was moderated by either self-report or causal complexity confidence (i.e., equations A, B, D, and E in Table 3, and equations J, K, M, and N in Table 4), the significant effects were all in the hypothesized direction.

The response latency measure failed to show any evidence of a consistent moderating relationship across any of the analyses. In fact, in the four analyses in which response latency was used as the measure of confidence and a significant interaction was predicted (equations G and H in Table 3, and P and Q in Table 4), the interaction term was in the opposite direction of that which was hypothesized (cf. H4 and H5) in 23 of the 48 analyses (48%).

To further investigate the relationships between the confidence measures, the correlations between each of the three latency scales and the self report and causal complexity measures were examined. The correlation between the latter two measures was .23 ($p < .01$), thus providing evidence of convergent validity. However, the range of correlations of the three latency measures with the two other confidence measures was from -.05 to .08, with an average (absolute value) correlation of .05. These results fail to provide support for the validity of response latency as a measure of attribution confidence. In sum, these results support for H4-H6 for the self-report and causal complexity measures of confidence, but do not support the hypothesized relationships using response latency as a measure of confidence.

Discussion

The evidence from the within-cell analyses appear to lend some support for the contention that attribution confidence moderates the relationship between attribution extremity and attribution outcomes. As such, support also is provided for: a) the contention that attribution extremity does not totally capture attribution confidence, and b) the validity of causal complexity and general self-report measures of confidence.

From a strict statistical significance standpoint, the results of the within cell analyses are not strong. However, it has been argued that statistical significance is in many cases a poor criterion to gauge the qualitative significance of results (Sawyer and Peter 1983). They suggest that more emphasis should be placed on replicability of findings because if a finding can be replicated sufficiently, statistical significance tests are unimportant.

The within-cell analyses conducted in the present study, while not providing the evidence of external validity that a series of twelve successful independent replications would, does provide moderate evidence of replicability across the twelve information conditions. For the 96 moderated regression analyses (2 x attribution extremity measures x 2 confidence measures x 2 attribution outcome variables x 12 conditions) in which

causal complexity and self-report were used as confidence measures and a direction was hypothesized for the interaction variable (i.e., H4 and H5), the interaction was in the hypothesized direction in 69 cases, and in the opposite direction in 27 cases. Further, when the moderating effect was statistically significant, the effect was in the hypothesized direction 14 times, and in the opposite direction 0 times. For circumstance attributions, it was hypothesized that confidence would *not* moderate the attribution extremity-attribution outcome relationship. Consistent with this hypothesis, no consistent pattern of results emerged; of the 48 relevant analyses (2 confidence measures x 2 outcome variables x 12 conditions), 21 of the interactions were positive and 27 were negative.

The results of the self-report and causal complexity confidence measurement methods across the three types of attributions can be taken as evidence of nomological validity. That is, attribution confidence acted as a moderator when there was theoretical justification for it to do so, and did not act as a moderator when there was theoretical justification for it not to do so.

Despite past findings that suggested that response latency was an appropriate measure of response confidence (cf. Aaker et al. 1980; Tyebjee 1979), no evidence was found supporting the validity of response latency as a measure of attribution confidence in the present study. Perhaps other factors such as student familiarity with the computer, student keyboard proficiency, the novelty of the study procedure, or some other facet specific to the present study procedure contaminated the response latency measure. Although the response latency measure employed in the present study was similar to measures employed by Aaker et al. (1980) and Tyebjee (1979), it is possible that the construct "attribution confidence" differs in some respect from types of response confidence used in these studies, and therefore requires two different measurement procedures.

In any event, given that: a) the concept of attribution confidence is specifically incorporated into attribution theory (cf. Jones and Davis 1965; Kelley 1973), b) people make attributions with varying degrees of confidence, c) attribution extremity does not appear to totally capture attribution confidence, and d) there is some support that attribution confidence moderates the relationship between attribution extremity and attribution outcomes (in the manner suggested by Mizerski et al. (1979)), it seems appropriate for researchers to assess attribution confidence in future attribution studies which investigate the impact of attribution extremity on attribution outcomes. Fortunately, the results of the present study suggest that attribution confidence can be measured with considerable ease with two "maximally dissimilar" measures. The self-report confidence measure can be assessed by adding one scale after a series of attribution extremity scales. The causal complexity measure, being a derivative measure of the probable-improbable rating scales, can be employed with no additional measures on a questionnaire, and also without respondent knowledge that confidence is being assessed. Therefore, it seems that confidence measures offer some explanatory power at very little cost to the researcher, indicating that confidence should be assessed in studies concerning attribution relationships.

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A Structural Analysis of Buying Style Variables

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Abstract

This paper, employing the information theoretic approach, reanalyzes the buying style variables for a sample of working women, initially analyzed by Clogg and Munch (1984) using latent structure analysis. The information theoretic method is shown to be useful in obtaining structural models within an *a priori* selected criterion variable.

Introduction

In marketing research, perhaps the most common method of exploration of the relationships between two (or more) qualitative variables involves the construction and analysis of cross-tabulations. Here, the cell entries of an *n*-way tabulation represent the joint frequencies (or joint probabilities) in which each combination of the variables' categories appears.

The present paper investigates the structural models and the analysis of association involving multidimensional contingency tables composed of qualitative data. A variety of alternative techniques, including log-linear, logit/probit, and latent structure analysis (LSA), are available for examining the extent of association in a discrete multivariate contingency table (Green et al. 1977, Perreault and Barksdale 1980, DeSarbo and Hildebrand 1980, Clogg and Munch 1984. Green et al. (1977) point out that "... other approaches to the modeling categorical data can be mentioned." One of these methods, among others, is based on information theory.

The present study employs an information theoretic approach to analyze multidimensional contingency tables. Though no statistical technique can replace theory, the present paper demonstrates that the information theoretic framework can provide researchers with a powerful tool for gaining valuable insight into qualitative/ categorical data. To demonstrate the potential usefulness of this approach in marketing research, the primary focus of the study presented next.

Purpose of the Study

This paper reanalyzes the buying style variables (e.g., style-consciousness, conformity, brand-loyalty, etc.) for working women, initially analyzed by Clogg and Munch 1984 who used the probability based latent structure analysis (LSA) technique. This approach begins with a multidimensional contingency table constructed from the variables under investigation. The aim of LSA is to identify a set of underlying (unobservable) variables which best characterize the structure of relationships among these variables.

Latent structure modeling is quite flexible and provides a means of testing (via goodness-of-fit tests) whether latent factors explain the observed association among variables, the substantive meaning of the latent variables, and how to assign individuals to the classes of the latent factor itself. In their article, Clogg and Munch (1984) compared two groups of working women, those who perceived their job as a "career" and those whose work was "just a job," in terms of the latent structural model parameters. Using this approach, they noted no

significant difference between buying style attitudes of the "career" vs. "just a job" women once the brand loyalty variable was excluded.

Instead of searching for latent structures within the data, the observable variables are analyzed here, by employing the information theoretic framework. More clearly, the information theoretic approach, in conjunction with the recently developed procedures for structure analysis is utilized to analyze observable variables (i.e., buying style variables) in order to: (1) assess interrelationships between such variables, (2) identify and separate those variables which are orthogonal (or nearly orthogonal) to the rest of the variables, and (3) identify a theoretically sound variable, *a priori*, and then obtain structural models within different classes of this variable.

It should be mentioned that this paper is not intended to directly compare the present approach with latent structure analysis and/or log-linear models. However, it is demonstrated that the information theoretic approach offers some advantages and provides some insight into the analysis of multivariable contingency tables which have often been analyzed by such procedures as log-linear and latent structure analysis.

Methodology

Uncertainty (variability) in a discrete probability distribution can be measured using Shannon's entropy (Shannon and Weaver 1949). This is a "unique, unambiguous" measure based on the intuitive notion that a broad distribution represents more uncertainty than does a narrow, sharply peaked distribution (Herniter 1973). For a given system with *N* possible states, entropy is given by:

$$H(X) = \sum_i P(X_i) \log(X_i) \quad (1)$$

where $P(X_i)$ is the probability of the system being in the state X_i ($i=1,2,\dots,N$) and the base of the logarithm is arbitrary (when assumed at two, the measurement unit of entropy is known as Binary digit, BIT).

A system with two variables, *X* and *Y*, can be viewed as having total (joint) variability --or "behavioral freedom" (Broekstra 1981)-- $H(X,Y)$. If this quantity has its maximum possible value, $H_{\max}(X,Y) = H(X) + H(Y)$, independence exists between *X* and *Y*. On the other hand, if the two variables are mutually associated, their joint behavioral freedom is reduced as they impose behavioral constraint upon one another. The degree of association between *X* and *Y* can be expressed as $T(X:Y)$, the difference between maximal and actual joint variability,

$$\begin{aligned} T(X:Y) &= H_{\max}(X,Y) - H(X,Y) \\ &= H(X) + H(Y) - H(X,Y) \end{aligned} \quad (2)$$

$T(X:Y)$ is known as "transmission." For the two variable case, transmission can be interpreted as the amount of variability removed from one variable once the other variable is known (i.e., amount of covariability between X and Y). This measure is completely decomposable which can be partitioned into variability between and variability within sets of variables, allowing for an ANOVA like analysis of variables (Garner and McGill 1954).

Furthermore, the uncertainty of variable in a multivariate system can be decomposed into the portion explained by other variables (i.e., transmissions and conditional transmissions between that variable and the remaining variables), and the proportion not explained (Ashby 1964, Krippendorff 1986). For instance in a four-variable system $WXYZ$, the following breakdown of the uncertainty of variable W may result:

$$H(W) = T(W:X) + T_X(W:Y) + T_{XY}(W:Z) + H_{XYZ}(W) \quad (3)$$

This equation can be used to prioritize the degree of explanation of variable W by variables X , Y , and Z , by sequentially selecting the highest contributors. For instance, in choosing $T(W:i)$, $i=X$, Y , or Z , i should be selected such that it renders the highest bivariate transmission; in selecting $T_i(W:j)$, $j=X$, Y , or Z , $j=i$, j should result in the highest conditional transmission, conditioned on i ; etc.

Transmission is used in this paper to first develop a bivariate transmission table between the buying style data for two groups of women. Through this process, bivariate interrelationships between variables will become apparent. This table is then used to eliminate variables which are unrelated to all other variables from further consideration.

Next, a theoretically sound variable is selected as the criterion variable (in this case, "brand loyalty" was selected), and Equation (3) is utilized in order to prioritize the contributions of the other (descriptor) variables to the determination of this (criterion) variable. This is in turn used to further isolate irrelevant variables.

Finally, after selecting a group of interrelated variable (and excluding insignificant variables), Krippendorff's (1986) spectral analysis of relations is utilized to develop structural models for each class of the criterion variable. We also revised Krippendorff's method by utilizing the transmission method used by Broekstra (1981) to assess the degree of mutual association of the system captured by each model.

Spectral analysis develops a tree of structure types from the most complex, which is the multivariate system without alterations, to the simplest structure which is a disjoint set of all the variables by systematically removing n -way, $(n-1)$ -way, etc. interactions and replacing each with their embedded lower levels of ordinality. The reader unfamiliar with spectral analysis should review Krippendorff (1986) and Broekstra (1981) for a thorough exposition of this technique and its related issues.

Spectral analysis will yield the "best" structural model within different classes of the criterion variable--The best structural model is defined as the model with the lowest possible ordinalities within its components which accounts for a statistically significant portion of the information contained in the top level structure. This

can then be extended to include the strength and direction of the interrelationships in each class.

Analysis

The data which was adopted from Clogg and Munch (1984), contained information regarding the buying style attitudes (and behavior) of white, married, full-time employed females in the middle three of the five "social class" categories. This data was extracted from a 1979 study of Media and Markets conducted by the Simmons Market Research Bureau.

The women in the sample were divided into two groups (G); those who consider their job as a "career", and those who consider their occupation as "just a job." The purpose of this partitioning was to assess the differences between the two groups based on their buying style attitudes. We shall demonstrate later that at least in this sample there is no appreciable difference between the two groups based on the buying style variables considered, and then, concentrate on the buying style variables for the whole group.

The selected buying style items were "style-conscious" (S), "persuadable" (P), "conformist" (C), "experimenters" (E), and "brand loyalty" (B). The original data were collected as five-category Likert type scales, but for the demonstration purposes, they were all dichotomized to agree-a-lot/disagree-a-lot categories. Then, a multidimensional contingency table of these six variables was developed and analyzed to identify different latent structures. It is this contingency table that we adopted in this paper. This data is presented in Table 1.

Obviously, in cases where variables are collapsed on their categories (i.e., recoded to lower number of classes), particularly, dichotomized variables, a myriad of questions and skepticism are invoked. Also, in assessing multivariate contingency tables, problems associated with sparse cells arises. These issues, however, are not addressed here. Interested reader is referred to Feick (1984) and Dillon et al (1981) for excellent discussions of such issues.

The bottom triangle in Table 2 presents the bivariate transmission table, while the top triangle shows their corresponding likelihood ratio chi-square (L^2). It is evident that variable G , group, has very little association with the rest of the variables. The only statistically significant association for this variable is with S , style-conscious, variable which has a likelihood ratio chi-square of 5.2 on one degree of freedom. However, due to lack of any apparent association with the remaining variables, this variable is considered nearly independent of the others and is dropped from further consideration.

Next, we collapsed the contingency table over G , the group variable. Among the remaining variables, B , brand loyalty, was selected as the criterion variable. The reason for this selection was the fact that, in practice, many marketing strategies begin by determining who are the loyal consumers of the product and what it takes to retain them, and on the other hand, who are the brand switchers or the competitors' brand loyals and what will persuade them to switch over to and remain with the company's brand.

Then, Equation (3) was applied to the five-variable cross-tabulation with B , brand loyalty, variable treated as the criterion variable. The following breakdown of uncertainty in B , brand loyalty, and prioritization of the other, descriptor, variables was obtained:

TABLE 1
Cross-classification table for the six-variable system

G	S	P	C	E	B	Freq.	G	S	P	C	E	B	Freq.
1	1	1	1	1	1	17	1	1	1	1	1	2	1
2	1	1	1	1	1	27	2	1	1	1	1	2	1
1	2	1	1	1	1	11	1	2	1	1	1	2	1
2	2	1	1	1	1	12	2	2	1	1	1	2	4
1	1	2	1	1	1	8	1	1	2	1	1	2	2
2	1	2	1	1	1	13	2	1	2	1	1	2	3
1	2	2	1	1	1	42	1	2	2	1	1	2	10
2	2	2	1	1	1	34	2	2	2	1	1	2	8
1	1	1	2	1	1	7	1	1	1	2	1	2	1
2	1	1	2	1	1	16	2	1	1	2	1	2	0
1	2	1	2	1	1	20	1	2	1	2	1	2	5
2	2	1	2	1	1	11	2	2	1	2	1	2	9
1	1	2	2	1	1	27	1	1	2	2	1	2	6
2	1	2	2	1	1	29	2	1	2	2	1	2	6
1	2	2	2	1	1	103	1	2	2	2	1	2	40
2	2	2	2	1	1	99	2	2	2	2	1	2	57
1	1	1	1	2	1	8	1	1	1	1	2	2	0
2	1	1	1	2	1	3	2	1	1	1	2	2	6
1	2	1	1	2	1	7	1	2	1	1	2	2	4
2	2	1	1	2	1	8	2	2	1	1	2	2	1
1	1	2	1	2	1	4	1	1	2	1	2	2	3
2	1	2	1	2	1	13	2	1	2	1	2	2	0
1	2	2	1	2	1	36	1	2	2	1	2	2	15
2	2	2	1	2	1	47	2	2	2	1	2	2	13
1	1	1	2	2	1	1	1	1	1	2	2	2	0
2	1	1	2	2	1	3	2	1	1	2	2	2	0
1	2	1	2	2	1	12	1	2	1	2	2	2	5
2	2	1	2	2	1	9	2	2	1	2	2	2	3
1	1	2	2	2	1	21	1	1	2	2	2	2	8
2	1	2	2	2	1	26	2	1	2	2	2	2	9
1	2	2	2	2	1	107	1	2	2	2	2	2	84
2	2	2	2	2	1	94	2	2	2	2	2	2	89

G = Group, S = Style-Conscious, P = Persuadable, C = Conformist, E = Experimenter, B = Brand Loyalty. Source: Clogg and Munch (1984).

$$\begin{aligned}
 H(B) &= T_{(B:S)} + T_{S(B:C)} + T_{SC(B:E)} \\
 (0.894) &= (0.019) + (0.015) + (0.012) \\
 L^2 &= 33.1 \quad 26.1 \quad 20.9 \\
 &+ T_{SCE(B:P)} + H_{SPCE(B)} \\
 &+ (0.009) + (0.839) \\
 &15.7
 \end{aligned}
 \tag{4}$$

degrees of freedom for each structure type, respectively, and column 5 lists the absolute difference between chi-squares of each structure type and the top level structure.

It is seen that all of the remaining variables are statistically significant (with $df = 1$ and $p \sim 0$ for all). Therefore, no other variables are dropped from further consideration. In general though, variables with no significant association with the criterion variable would be eliminated in the order of their prioritization (i.e., the last in the priority list would be dropped first).

Finally, the structure analysis technique was utilized to assess the interrelationships between each class of the criterion variable B, brand loyalty, (i.e., brand loyal/brand disloyal). Tables 3 and 4 show the best representative structures obtained from all permutations of the variables for brand loyal and brand disloyal, respectively. In these two tables, column 1, Structure, lists the structure types, column 2, indicates the amount of transmission captured by structure type, column 3 and 4 contain the chi-square value and the

TABLE 2
Bivariate transmission table of the six-variable system

	G	S	P	C	E	B
G	-	5.2	0.0	0.0	0.0	0.0
S	.003	-	61.0	22.7	17.4	33.1
P	.000	.035	-	64.5	31.4	17.4
C	.000	.013	.037	-	3.5	31.4
E	.000	.010	.018	.002	-	26.1
B	.000	.019	.010	.018	.015	-

Figures in the lower triangle are transmission measures and those of the upper triangle are their corresponding likelihood ratio chi-squares.

TABLE 3
Structure Analysis of the Brand Loyal Group

(1) STRUCTURE	(2) CAPT.	(3) CHI-SQ	(4) df	(6) DIFF.
SPCE	0.1113	135.26	11	0.00
SPC/SPE/SCE/PCE	0.1120	136.18	11	0.91
PCS/PSE/CSE	0.1108	134.66	11	0.61
CSP/SPE/CE	0.1109	134.77	11	0.49
PCE/CS/ES/PS	0.1108	134.75	11	0.51
CSP/SPE	0.1105	134.29	7	0.97
SP/SC/SE/PC/PE/CE	0.1096	133.23	11	2.03
ESP/SC/PC	0.1111	135.01	7	0.25
CS/CP/SP/SE/PE	0.1092	132.75	7	2.51
SEP/PC	0.1020	123.95	5	11.31
SP/SE/PC/EC	0.0845	102.72	5	32.54
EC/EP/CP/PS	0.0913	122.77	5	12.49
SPC/E	0.0834	101.41	4	33.85
SE/SP/PC	0.0841	102.24	9	33.02
SP/CP/PE	0.0909	110.53	3	24.74
SP/SC/PC/E	0.0840	102.13	4	33.13
SE/PC	0.0428	52.01	2	83.25
SP/CP/E	0.0749	91.07	2	44.19
CE/SP	0.0422	51.34	2	83.92
0	0.0000	0.00	0	135.26

The best structures from each group of structure types obtained in the spectral analysis of relations process for the subtables B = B1, brand loyal, and descriptor variables S, style consciousness, P, persuadability, C, conformity, E, experimenter qualities.

TABLE 4
Structure Analysis of the Brand Disloyal Group

(1) STRUCTURE	(2) CAPT.	(3) CHI-SQ	(4) df	(6) DIFF.
SPCE	0.1163	61.29	11	0.00
SPC/SPE/SCE/PCE	0.1085	57.15	11	4.14
SPE/SEC/PEC	0.1180	62.15	11	0.86
SPE/PEC/SC	0.1298	68.39	11	7.10
PCE/CS/ES/PS	0.1437	75.68	11	14.39
SPC/PCE	0.1145	60.32	7	0.97
SP/SC/SE/PC/PE/CE	0.1581	83.27	11	21.98
ESC/SP/CP	0.1156	60.90	7	0.39
SP/SE/PE/PC/EC	0.1207	63.56	7	2.27
SCP/PE	0.1056	55.61	5	5.68
SC/SE/CP/EP	0.1125	59.24	5	2.05
PE/PC/EC/CS	0.1161	61.18	5	0.11
SPC/E	0.0749	39.48	4	21.81
PE/PC/CS	0.0928	48.88	9	12.41
SC/PC/CE	0.0855	45.05	3	16.24
SP/SC/PC/E	0.0844	44.48	4	16.81
SE/PC	0.0444	23.40	2	37.89
SC/PC/E	0.0622	32.75	2	28.54
SP/CE	0.0386	20.33	2	40.96
0	0.0000	0.00	0	61.29

The best structures from each group of structure types obtained in the spectral analysis of relations process for the subtables B = B2, brand disloyal, and descriptor variables S, style consciousness, P, persuadability, C, conformity, E, experimenter qualities.

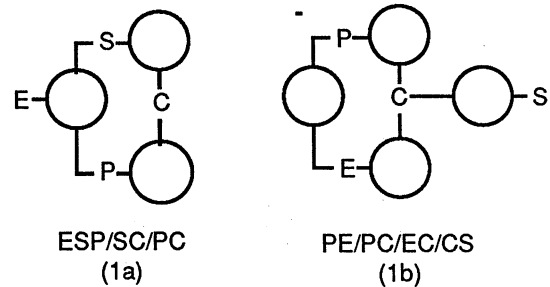
To clarify what we mean by the "best representative structure," consider the model PCS/PSE/CSE in table 3 (i.e., the third structure type from the top). All permutations of this particular structure type were SPC/SCE/PCE, SPE/SEC/PEC, SCP/SPE/CPE, PCS/PSE/CSE. The absolute difference in chi-square values between PCSE, the top level structure, and each one of these four structures was calculated as 1.35, 1.64, 1.03, and 0.61, respectively. Therefore, PCS/PSE/CSE was selected as the structure which is the best representative among the four, as it approximates the top structure most closely.

Clearly, in Table 3 the best structure type for the brand loyal class (B=B1) is the structure ESP/SC/PC (p=0 and diff.=0.25). Similarly, the best structure type in Table 4, for the brand disloyal group (B=B2) is the structure type PE/PC/EC/CS (p=0, and diff.=0.11) These two structure types are depicted in Figures (1a) and (1b), respectively.

The structure type in Figure (1a), ESP/SC/PC, can be interpreted in the following manner: Among brand loyal individuals in the sample, experimenter quality (E), style-consciousness (S), and persuadability (P) have three-way direct interactions, style consciousness (S) and conformity (C), and persuadability (P) and conformity (C) have two-way direct interactions, while experimenter quality (E) and conformity (C) have only indirect interactions.

Similarly, the structure type in Figure (1b), PE/PC/EC/CS, can be interpreted in the following way: Among brand disloyal individuals in the sample, conformity (C) has direct two-way interactions with Persuadability (P), experimenter quality (E), and style consciousness (S), while Style consciousness (S) has only indirect interactions with Persuadability (P) and Experimenter quality.

FIGURE 1
Graphical Representation of the Best Structural Models



(1a) is the selected model for B=B1, brand loyal; while (1b) is the selected model for B=B2, brand disloyal.

CONCLUSIONS

The foregoing analysis demonstrated that the information theoretic approach is capable of analyzing multidimensional contingency tables and addressing fundamental issues such as:

- a) Assessing the interrelationships among variables-- e.g., by constructing bivariate (or higher order) transmission tables and identifying the most (and the least) interrelated variables. This is useful in

identifying and excluding variables which are least associated with other variables.

- b) Prioritizing the extent of contribution of each (descriptor) variable to the reduction of uncertainty about an *a priori* selected criterion variable. This would enable the researcher to select the most significant descriptor variables and then, assess the criterion variable based on this reduced set of variables.
- c) Conducting structural analysis for each class of the criterion variable and identifying the best structural model within each class. Structural models in general, are useful for the purposes of simplification and substantive interpretation of relationships among variables.

These analyses are performed straight forwardly, with readily available substantive interpretations. Clogg and Munch (1984) primarily focused on the latent class identification problem. Here, the focus is on the observable variables. It is natural to attempt to draw conclusions based on observable variables first. Only when the observable variables do not provide satisfactory results, latent variables should be sought.

In the present treatment, it is demonstrated that in order to assess the buying style variables which determine brand loyalty of a consumer, reasonably simple structures (which are statistically significant) for each class of this variable can be identified. Information theory provides the main vehicle for this structure identification problem.

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A Management Science Assessment of a Behavioral Measure of Brand Loyalty

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Abstract

This paper offers a new behavioral measure of brand loyalty, denoted Scaled Probability of Purchase (SPOP), explores its properties, and then examines its performance relative to Jacoby and Chestnut's (1978) nine criticisms of behavioral measures of brand loyalty. This author contends that the increase in availability, accuracy, and affordability of behavioral (scanner panel) data warrants a reexamination of Jacoby and Chestnut's conclusion that brand loyalty measures should be a composite of attitudinal and behavioral measures. Since attitudinal measures of brand loyalty are not normally available from scanner panel households, the gains in behavioral data collection do not apply to composite measures as well. This author concludes that behavioral measures such as SPOP are sufficiently informative to warrant their continued use, at least for frequently-bought consumer goods.

Introduction

In their definitive study of brand loyalty, Jacoby and Chestnut (1978) conclude that measurement of brand loyalty should be composite, i.e. based upon both behavioral and attitudinal data. They see behavioral and attitudinal data guarding against each other's deficiencies.

Since 1978, marketing has seen great strides in the routine collection of behavioral data. In particular scanner data at the store level and at the household level are now widely available for low-priced frequently purchased goods. While advantages of diary panels remain (such as complete coverage of purchases), now entire cities have most stores equipped to record the purchases of scanner panel members in an unobtrusive manner.

Attitudinal measures from these scanner panel consumers are not normally available, however. Economies of scale in data collection mean that third parties (market research suppliers) will continue to collect these data and then sell them piecemeal to companies on a product by product basis. Market research suppliers must see to it that their panel remains as representative of the general population as possible. Obtaining new panel members for scanner panels is more difficult than for diary panels because of the requirement that panelists reside in one of the cities equipped to record scanned panel purchases. This means that attitudinal measures of brand loyalty from these same households are likely to remain unavailable for the foreseeable future.

Does the unavailability of attitudinal data from scanner panels imply that the scanner data should not be used to study brand loyalty? The attractiveness of these data in other respects prompted me to reexamine the issue of brand loyalty. This paper will not argue that scanner panel data are a panacea. Rather, it asks whether meaningful measures of loyalty, at least for low-priced frequently-purchased brands, can be obtained from scanner panel data.

Behavioral measures of brand loyalty are most likely to be meaningful for frequently purchased low-priced branded goods. In this case there are few barriers to purchase (such as price and availability) that would force behavior to differ from attitude, and so behavioral

and the more expensive composite measures of brand loyalty are likely to agree¹.

Uses of the Brand Loyalty Concept

Brand loyalty is a simple concept. Drawing upon the *Webster's Third New International Dictionary* definition of loyalty, we have brand loyalty as being "fidelity or tenacious adherence" to a brand on the part of buyers. A loyal friend is someone who will stick by you pretty much no matter what, and a loyal buyer will stick by your brand.

The purpose of identifying brand loyal consumers can be any of several:

To Exploit the Brand Loyalty

It can be argued that if consumers are delighted with a brand and its terms of purchase, then the brand manager is doing something wrong. At a minimum the manager is charging too low a price, or is overspending on promotion or some other element of the marketing mix. Identifying brand loyal consumers is a starting point for determining a differentiated marketing mix to that group (one that is more profitable). "Exploitation" of loyal buyers, so defined, leads to all buyers benefiting equally from the exchange: enough to retain their patronage, but not much more.

To Identify the Loyal Buyer in Case of Hard Times

Marketers may wish to sustain the surplus goodwill that is brand loyalty as a defense or deterrent against aggressive marketing by a competitor or as a hedge against adverse economic conditions. The brand loyal buyer is the consumer to retreat to in case of a bad turn of fortune, and it pays to know in advance who the loyal buyers are.

To Better Market to Those Who Can Be Made Brand Loyal

Knowing which customers are very pleased with a brand indicates that psycho- or sociodemographically similar consumers in the general population are also good prospects. This use of brand loyalty presumes further penetration of the market is feasible and that similar consumers can be identified, which is more likely to be true for growing product categories and for brands that are new and truly differentiated.

A Measure of Brand Loyalty Based on Purchase Probability

After locating 33 different behavioral measures of brand loyalty in the literature, Jacoby and Chestnut (1978) criticize these measures on nine grounds. This paper begins by proposing yet a 34th measure of brand loyalty, and the section following will evaluate this measure against Jacoby and Chestnut's criticisms. Jacoby and Chestnut will hereafter be referred to as J&C.

The measure proposed, which I call Scaled Probability Of Purchase (SPOP), is not offered as *the* measure of brand loyalty, in part because there are too many other contenders for the title, and in part because

¹ I am indebted to an anonymous reviewer at ACR for this insight among others.

the best measure may depend upon the data available and the purpose. SPOP is defined as follows. Presuming for the moment a good estimate of a household's purchase probabilities for a set of J brands (P_1, \dots, P_J), the household's loyalty towards the i th brand in the set is defined as:

$$L_i = J(P_i - 1/J) = J P_i - 1 \quad (1)$$

Thus SPOP is a linear transformation of the household's purchase probabilities for the brands. Many of SPOP's properties will be explained in the context of J&C's criticisms, but the rationale underlying the measure and its essential properties warrant immediate explanation.

Translating Probability of Purchase to a Meaningful Origin

Construction of the SPOP measure begins with subtracting $1/J$ from all purchase probabilities to give a meaningful origin to the measure. A household that buys a brand with probability exceeding $1/J$ is buying the brand more often than the average brand and therefore shows some degree of loyalty to the brand. This household receives a positive SPOP score. A household buying a brand with probability less than $1/J$ is disloyal and receives a negative SPOP score for that brand.

Scaling Translated Probabilities of Purchase

$(P_i - 1/J)$ has a maximum value of $(J-1)/J$ and a minimum of $-1/J$. It seems that a measure of brand loyalty should be somewhat robust to the number of brands included in the analysis. If a household *never* buys a brand, then the maximum disloyalty cannot be less than this, regardless of what other brands are bought. Multiplying $(P_i - 1/J)$ by J yields a maximum disloyalty score of -1 regardless of the number of brands and leaves the origin unchanged. However, multiplying $(P_i - 1/J)$ by J also changes the *maximum* loyalty measure to $J-1$. Thus maximum attainable loyalty increases with the number of brands in the analysis. This is conceptually pleasing for two reasons. First, since always buying a brand out of a larger set of competing brands is a stronger (and rarer) indication of loyalty to the brand, this ought to be reflected in a larger maximum attainable score for the brand loyalty measure. Adding brands with very low purchase probabilities to a choice set makes the loyalty scores for the initial brands increase, even from being disloyal to being loyal. For example, suppose that a consumer's probabilities of purchase for the two brands constituting a market are .6 and .4. Then we would have to say that the consumer is not very committed to the second brand. In fact, the SPOP scores would be .2 and -.2, respectively, indicating that the consumer is slightly disloyal to the second brand. Suppose next that 4 brands are added to the product category, but that none of these brands attract purchases from this buyer. The buyer's purchase probabilities for the 6 brands become .6, .4, 0, 0, 0, 0. Now we would be inclined to say that the consumer is somewhat loyal to the first two brands, and disloyal to the other four. This intuition is reflected in the SPOP scores for the brands: on a scale now of 5 to -1 , the SPOP scores for the 6 brands have become 2.6, 1.4, -1 , -1 , -1 , -1 .

Second, adding a brand to the choice set that attains an average probability of purchase (and hence a

SPOP score of zero) by drawing share proportionately from existing brands leaves the SPOP scores for these brands unchanged. For example, suppose a household's probabilities of purchase for three brands are given by .5, .3, .2. The corresponding SPOP scores are 0.5, -0.1 , -0.4 . Adding the fourth brand changes the household's purchase probabilities to: .375, .225, .150, .250 but the SPOP scores are still: 0.5, -0.1 , -0.4 , 0.0.

Note that SPOP yields a separate measure of a household's loyalty towards each of the brands in the choice set, and that the measure is continuous and not discrete. In addition, the average SPOP brand loyalty score over all brands is always zero.

Obtaining Good Estimates of a Household's Probabilities of Purchase

The SPOP measure of brand loyalty presumes a good measure of a household's probability of buying each brand. Observed purchase frequency is *not* a good measure. It is unstable for short periods of observation and yet over longer periods of observation many households are likely to change their behavior.

One resolution of this dilemma is to use a Bayes estimate of a household's purchase probability for each brand. A Bayes estimate recognizes that the household is sampled from a population and uses information about the population to yield an improved estimate of the household's purchase probability.

If the purchase probabilities are distributed Dirichlet (with parameters a_1, \dots, a_J), then the Bayes estimates of a household's purchase probabilities are easily derived. The distribution of the purchase probability for brand i for households observed to buy brand i n_i times on N purchase occasions is Beta with parameters $(a_i + n_i, A - a_i + N - n_i)$, where a_i is the parameter of the Dirichlet distribution corresponding to brand i and $A = a_1 + \dots + a_J$. The mean of this distribution is the Bayes estimate of purchase probability. It is the minimum variance estimator and it is given by:

$$PB_i = a_i + n_i / (A + N) \quad (2)$$

Notice that the estimate works even for households that were never observed to buy any of the brands. In the absence of any information about a household, our best estimate of its purchase probabilities are the average purchase probabilities in the population. On the other hand, as a household is observed to make more and more purchases, the estimates of the household's purchase probabilities approaches that of its observed purchase frequency (n_i/N).

Basing SPOP on Bayes estimates of purchase probabilities avoids misattributing brand loyalty to households that bought the same brand repeatedly due to chance. To see this, consider a hypothetical market consisting of two brands: 1 and 2. Everyone in that market buys whichever brand is on sale that week, and let's say that each brand is cheaper half the time. Therefore no buyer is brand loyal to either brand, and every buyer has a probability of purchasing each brand of one-half. If a large sample of such buyers are observed for two purchase occasions, then we would observe the buying behavior portrayed in Table 1. In truth all consumers are identical, neither loyal nor disloyal to either brand (with SPOP scores of zero for both).

Table 1
Hypothetical Buying by Nonloyal Households

Observed purchasing	Fraction of population
Brand 1 "loyal"	.25
Brand 2 "loyal"	.25
Not loyal to either brand	.50

Fitting the Dirichlet-multinomial model (known as the Beta-binomial in this two-brand case) to these data yields parameter estimates $a_1 = a_2 = \text{infinity}$. These strange parameter estimates reflect the fact that all buyers have identical true purchase probabilities of one half, a limiting case of the Beta distribution. Nevertheless, substituting these parameter estimates into the formula for P_{B_i} yields true purchase probability estimates of .5 for all households, regardless of their observed purchase behavior, and fitted SPOP scores of zero for all brands and consumers. Thus even in this extreme case, the SPOP measure is not "fooled" into misattributing brand loyalty, provided that Bayes estimates of purchase probabilities are used.

Critique of Behavioral Measures of Brand Loyalty

I now turn to a consideration of the J&C criticisms of behavioral measures of brand loyalty and discuss how well SPOP measures up.

"Behavioral Measures Lack a Logical-Conceptual Basis"

Based as it is on purchase probability, SPOP has the economic theory of random utility maximization as its basis. On a randomly selected choice occasion, P_i is the probability that brand i has the highest utility of all brands:

$$P_i = \text{Prob} [U_{it} > U_{jt}, \text{ for all } j \text{ not equal to } i] \quad (3)$$

where $U_{kt} = V_k + e_{kt}$, V_k is the nonstochastic utility for the brand, and e_{kt} is the stochastic component of utility that varies from one choice occasion to the next. In practice, e_{kt} will be capturing the effects of changes in consumption situation and in marketing mix variables.

For every P_i there is an implied V_i and *vice versa* (Daganzo 1979). The simplest specification of V_i is $\ln(P_i)$, but widely used (e.g. Nakanishi and Cooper 1974) is a transformation that standardizes V_i to have zero mean across brands (just at SPOP does):

$$v_i = \ln(P_i/P^*) \quad (4)$$

where P^* is the geometric mean of the purchase probabilities.

V_i so defined would make an attractive measure of brand loyalty because it shows the household's underlying enduring preference for the brand. I chose to work instead with a linear transformation of purchase probability for two reasons. First, V_i has values of minus infinity and of plus infinity for brands with purchase probabilities of zero and of one, respectively. These will arise when observed frequencies must be used, and infinities do not work well as data. Second, as was shown above, there exists for purchase probabilities a simple formula for estimating a household's purchase

probabilities based upon only a few purchases. Using SPOP with these estimates avoids the misattribution of brand loyalty to repeat buying that is driven by stochastic errors.

Since purchase probability (and hence SPOP) has a monotonic relationship to the enduring random utility preferences (the V_i 's), purchase probability is justifiably referred to as a measure of brand preference as well.

"Behavioral Measures Use Arbitrary Criteria to Distinguish Between Loyal and Disloyal Buyers"

SPOP is scaled so that zero is the dividing point between loyalty and disloyalty, that point corresponding to the average purchase probability across brands ($1/J$). Returning to the random utility origins, it corresponds to the average brand preference--consumers are described as disloyal when they like a brand less than the average brand in the category. This measure of brand loyalty is relative but nonarbitrary.

"Behavioral Measures Are Overly Simplistic"

This objection is hard for a management scientist to deal with because, *ceteris paribus*, simplicity in a model or measure is a virtue. On the other hand, too much of anything is bad, and so the charge as stated is unanswerable.

The substance of J&C's objection seems to be that brand loyalty is complex, therefore any measure of it must be complex. My view is that there are measures of constructs and then there are models that capture the relationships between constructs. It is a matter of choice whether complexity is embodied within measures or within models. Management scientists tend to prefer simplicity in measures, relying on models to explain essential relationships.

"Behavioral Measures Fail to Account for Disloyalty"

The SPOP measure distinguishes between loyalty and disloyalty. Any positive value for SPOP represents loyalty to the brand, any negative value disloyalty, and a value of zero neutrality. Thus the SPOP measure can be used to investigate consumer behavior along a loyalty-disloyalty continuum.

"Behavioral Measures Fail to Specify the Appropriate Unit of Measurement"

SPOP uses as data the number of units purchased by a household of each brand. Some argue that the Achilles' heel of panel data is that one does not observe the buying behavior of individuals and therefore the household-level data constitute a misaggregation of behavior by heterogeneous individuals.

Several points can be made in defense of household-level data. First, for some products the household is the consuming unit. Regular ground coffee is thought to be an example of this--the product is perishable once opened and is typically prepared in batches, and so most families consume at home a single brand of regular ground coffee at any one time.

Second, and for a much wider range of products, it may be better to study household-level behavior because it captures the interdependence of family members on each other's consumption behavior. For example, are the breakfast cereals bought by a household really the summation of individually-determined brand choices? Studies focusing on individual preferences frequently

ignore the interdependencies within families of attitude, behavior and choice.

Third, while it is true that aggregating individual behavior into household behavior will disguise some of the heterogeneity in preferences in the population if preferences are truly individual, the extent of this misaggregation is an empirical issue that is not resolved. It is known for most frequently-bought goods that considerable heterogeneity in buying behavior is retained in the household-level data. Whether this reflects all or even most of the heterogeneity in behavior is hard to say, largely because individual-level behavior is not at present well monitored.

Finally, even when we have measures of individual-level behavior and/or attitude, the problem of misaggregation remains. To the extent that preference is determined by consumption *situation*, any measure of brand loyalty that is not conditional on situation is misaggregated (Srivastava, Alpert and Shocker 1984). There is a tendency to reject household-level data based upon a suspicion of misaggregation while blithely risking misaggregation across consumption situations. This is not to say that loyalty should always be measured conditional on both individual and situation, nor that we should always resort to household-level data because "misaggregation is unavoidable." Rather, a level of aggregation should be selected after consideration of the risk of misaggregation for that product category, recognizing that less aggregate data lower this risk while being more costly and perhaps less reliable in other respects.

Interestingly, J&C do not argue the misaggregation case against household-level data. Instead, they argue that any unit of measurement defined at the household level cannot be tied very well to individual-level data collected from the same households (such as personality scores) because we do not observe which family members are doing the purchasing. Yet the noncombinability of observed household behavior with attitudinal measures of individuals is a problem for *composite* measures of brand loyalty, and not with either type of measurement taken singly. If forced to choose between behavioral or attitudinal measures, J&C confess to a bias towards attitudinal measures. I suspect that most management scientists have a bias towards the behavioral because the data are objective and because they are closely tied to the behavior of interest, i.e. to what people buy and not to what they say they like.

"Behavioral Measures Explain Only the Outcome of the Decision-Making Process, and Not the Process Itself"

This assertion also makes a management scientist pause, because a measure that tells you what you want to know and nothing else is, *ceteris paribus*, a good

measure. However, it is incorrect to suggest that purchase probability cannot be used to yield insight into the causes of loyalty to a brand. This role can be served by models such as logit that relate SPOP to marketing variables and household characteristics using a formulation such as:

$$\ln[(SPOP_{i+1})/(J-SPOP_{i-1})] = b \ln(X_i) + e_i \quad (5)$$

where *b* is a parameter (or vector of parameters) and *X_i* is a positive exogenous variable (or vector of such variables). Variables not logically positive are first made so by exponentiation. The SPOP scores are more reliably estimated for some households (such as those that bought many times) than others, which means that *e_i* is heteroscedastic. But the error variance is known to be:

$$\text{Var}(SPOP_i | n_i) = J^2 (a_i + n_i) (A - a_i + N - n_i) / [(A + N)^2 (A + N + 1)] \quad (6)$$

and this can be used to estimate the logit model by weighted least squares (Jones and Zufryden 1980).

"Most Behavioral Measures Fail to Account For Multibrand Loyalty"

SPOP accounts for multibrand loyalty. A household that buys two brands half the time out of four available would be registered as being (equally) loyal to the two brands and disloyal to the others (the SPOP scores would be: +1, +1, -1, -1). The loyalty to either brand would not be as high as for households that bought only a single brand (the SPOP scores are then: +3, -1, -1, -1), but then neither should it be.

"Relations Among the Various Behavioral Measures Have Not Been Studied Empirically"

Here, J&C provide an example of purchasing by four households and show how different measures would reach different conclusions about who is loyal and who is not. Disagreement among measures is not the fault of any single measure, nor is the absence of research showing agreement. Reproduced here from J&C (p. 44) are 10 hypothetical purchases by 4 households towards the 8 brands A through H. Remember that these examples were invented by the authors to make their point. Their examples are given in Table 2, along with the implied SPOP scores.

**Table 2
J&C's Four Hypothetical Households**

		SPOP Measures for the 8 Brands							
ID	Purchases	A	B	C	D	E	F	G	H
1.	AABAABAABA	4.6	1.4	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
2.	BCDEFGHAAA	1.4	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
3.	AABAACAAAD	4.6	-0.2	-0.2	-0.2	-1.0	-1.0	-1.0	-1.0
4.	AABAACAADA	4.6	-0.2	-0.2	-0.2	-1.0	-1.0	-1.0	-1.0

The SPOP measures of brand loyalty in this case are the purchase shares times 8 less 1. (For panel data there is a better estimate of purchase probabilities, as was discussed above.) Households 3 and 4 have the same SPOP measures for the brands. J&C invented households 3 and 4 to show that a "three purchases in a row" criterion for brand loyalty would create an unwanted distinction between the two households in their loyalty to brand A.

That household 1 should have the same measured loyalty to brand A as households 3 and 4 makes one pause. Household 1 concentrates its .3 non-A purchase probability on brand B, but households 3 and 4 spread their .3 non-A purchase probability evenly among three other brands. Should the degree of concentration of non-A purchases affect the loyalty measure for brand A as does their frequency? The best answer is no for three reasons. First, sales lost are sales lost, and whether to one other brand or to several seems to belong to the realm of second order effects.

Second, analysis of the logit market attraction model of purchase probability supports ignoring degree of concentration of purchasing among other brands. The market attraction model appears in its simplest form as:

$$P_i = x_i^b / (\sum_j x_j^b) \tag{7}$$

where X_i and b are as defined previously. If, as is usually assumed, revenues are linear in purchase probability and costs are linear in the marketing variable, then the optimal level of the marketing variable for brand i (ignoring competitive response) is determined by the derivative of purchase probability with respect to the marketing variable:

$$dP_i / dX_i = b P_i (1 - P_i) / X_i \tag{8}$$

Note that the distribution of purchases among non- i brands is irrelevant.

Finally, SPOP is a vector of a household's loyalties to all brands in the market, and so information about the distribution of loyalty over non- A brands is retained. Attempting to incorporate loyalty towards non- A brands into the measure of loyalty towards A (and doing this simultaneously for all brands A - H) would be redundant and unnecessarily confusing.

"Behavioral Measures Lack Demonstrated Reliability and Validity"

The reliability for SPOP is readily computed. The reliability coefficient for an estimate is given by the ratio of the variance in true scores to the variance in observed scores (cf. Nunnally 1978, p.215). In the case of SPOP, this is the variance in true purchase probability for a brand over the sample of households, relative to the variance in the within-household market share (n_i/N) over households. The former is given by (Greene 1982, p. 155):

$$\text{Var}(P_i) = a_i (A - a_i) / [A^2 (A+1)] \tag{9}$$

The variance in n_i is given by (Greene 1982, p. 157):

$$\text{Var}(n_i) = N a_i (A - a_i) (A + N) / [A^2 (A+1)] \tag{10}$$

Hence the reliability coefficient is given by $\text{Var}(P_i) / \text{Var}(n_i / N)$:

$$r = N / (A + N) \tag{11}$$

Since SPOP is a linear function of purchase probability, its reliability is $N / (A+N)$ as well.

Interestingly, psychometricians (Nunnally 1978, p. 217) recommend that deviations in true scores (from their mean) be estimated from the deviations in observed scores by multiplying the latter by the reliability coefficient. In our case, the estimate of a household's purchase probability for brand i (P_{ri}) is:

$$P_{ri} - a_i / A = r (n_i / N - a_i / A), \text{ or} \\ P_{ri} = (n_i + a_i) / (A + N) \tag{12}$$

This is the same as the Bayes estimator P_{Bi} recommended above.

An Empirical Example

SAMI/Burke, Inc. made available the records of purchases of six liquid laundry detergents by a panel for a one year period. 1268 households bought at least one unit, and the average number bought by them was 7.6. Observed for each household is the number of units bought of each brand. A fit of the Dirichlet-Multinomial model by maximum likelihood yielded parameter estimates a_1, \dots, a_6 equal to (.198, .512, .193, .150, .179, .116). $A = a_1 + \dots + a_6$ is therefore estimated as 1.348. Then the reliability of SPOP for a household that bought a total of N units (all brands combined) is equal to $N / (N + 1.348)$, regardless of which brands were bought. Households bought anywhere between 1 and 70 units, but the average reliability over all households is .73. The means and standard deviations of the SPOP scores over all households for the six brands are shown in Table 3.

Table 3
Scores for Six Liquid Laundry Detergents

Brand	SPOP	
	mean	st. dev.
Dynamo	-0.17	1.14
Wisk	1.42	1.81
Era	-0.2	1.09
Yes	-0.39	0.96
Solo	-0.18	1.23
A&H	-0.48	0.99

From Table 3 it is apparent that the highest average loyalty is to Wisk. This brand is in fact the "prototypical" brand--the one that founded the liquid detergent category. It's having the highest average loyalty measure reflects its having the largest market share. However, the households differ more in their loyalty to Wisk than to any other brand. The standard deviations for all brands are high, indicating that considerable heterogeneity in consumer behavior is retained by the household-level data. This is not surprising for laundry detergent if you believe that the household, and not individual family members, is the consuming unit. Were demographic data available for these households, then brand loyalty could be related to these characteristics by logit, as was shown previously.

Conclusion

At the time of the Jacoby and Chestnut (1978) study, the benefit / cost = value of several methods of measuring brand loyalty were such that composite (behavioral plus attitudinal) measures were the best value overall. But in the past decade the widespread availability of low cost behavioral data has raised the value of behavioral data without facilitating composite measurement. A comparison of the different measures of brand loyalty in terms of value may be as shown in Table 4. It appears that, in the case of frequently-bought consumer goods, behavioral measures of brand loyalty such as SPOP are here to stay for the foreseeable future.

Table 4
Value of Different Measures of Brand Loyalty for
Frequently-Bought Consumer Goods

Measure	Benefit	/	Cost	=	Value
behavioral (panel data)	2		1		2
attitudinal	2		2		1
composite	6		3		2

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Measurement Approaches for Consumer Behavior Constructs: A Multidimensional Perspective

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Abstract

Measurement issues are becoming increasingly important to consumer researchers. Concepts such as measurement error and reliability are incorporated in much of the research conducted today. Relatively less attention, however, has been directed toward understanding the diverse number of measurement approaches available. More importantly, discussions of which measurement approaches are appropriate under which conditions have received less attention. We propose an elementary taxonomy for categorizing the various measurement approaches. This taxonomy is based on considering the properties of the three dimensions of measurement elements: construct, operationalization, and indicants. The taxonomy is shown to be useful in deciding the suitability of different approaches. Several examples from marketing are provided. Implications for future research are also discussed.

INTRODUCTION

Consumer researchers often work with "constructs" as the basic units of research. That is, much effort is directed in building, investigating and modifying theories which specify relationships between two or more constructs. Most such constructs are "latent", i.e., can only be measured indirectly by (usually) multiple indicators. Dillon et al. (1983, p. 209) observe that, "the use of multiple indicators to reflect inherently abstract constructs not subject to direct measurement is perhaps the most significant advance in social science research in the last decade." Within this context, the role of measurement as the link between observed indicators and the latent construct is unequivocally regarded as "the most difficult and crucial to scientific enterprises." (Greer 1969; p. 160).

Recognition of measurement's role is increasing within the marketing discipline in general (Ray 1979; Bagozzi 1982; Churchill and Peter 1984), and consumer behavior in particular (Dillon et al. 1983; Fornell 1983; Bagozzi 1983). This is evidenced by the widespread adoption of measurement concepts (e.g., reliability) in published articles. In most cases, however, this adoption is limited to linear factor analysis--either exploratory or confirmatory--based investigation of measurement properties. Yet in a recent review of the literature, Lewis (1986) noted that the last twenty years of measurement research have led to about fifty different "models" for understanding the "elusive" relationship between the latent construct and the observed responses.

The purpose of this paper is to explore some of the preceding models. More specifically, the underlying motivation of this research is twofold. First, to highlight some measurement approaches that heretofore have remained underutilized in consumer research. Second, to provide an elementary taxonomy of the different measurement models. In particular, the suggested taxonomy is based on a multidimensional perspective of measurement. This perspective derives from considering the characteristics of the three elementary units of measurement: construct, operation-

alization, and indicants. Although the proposed taxonomy is not rigorous in a strict sense, it helps to identify the fundamental differences in the various approaches. Such identification can be useful to researchers in applying appropriate measurement models, and thus in better characterizing the latent construct measured by fallible indicators. Several examples from consumer behavior are provided. Implications for future researchers are also discussed. However, we first attempt to delineate the scope of measurement for the purposes of this paper.

DELINEATING THE SCOPE OF MEASUREMENT

Researchers sometimes employ different perspectives in examining measurement issues. Because the adopted perspective represents a framework within which various issues would be evaluated, it is important that researchers clearly identify the perspective they utilize. This section addresses this prescription. More specifically, we discuss the perspective (and its characteristics) employed in this research to examine the multi-dimensional measurement approaches.

Bagozzi (1983) suggests three broad perspectives for examining measurement issues. These perspectives can be viewed as understanding measurement properties of constructs resulting from examining (1) other constructs, (2) instrumentation, and (3) observations. The first focuses on the affect of "other" constructs such as omitted variables, method variation (e.g., response sets) and predictor constructs (e.g., those suggested by theory). Such other constructs can potentially influence the measurement properties (e.g., reliability, validity) of the focal construct. The second perspective attempts to understand the effect of theoretical "laws" underlying the instrumentation used to obtain responses such as data collection, recording, and responding systems (Bagozzi 1983). The third perspective constitutes understanding the relationship between observations and the theoretical construct as the basis for characterizing its measurement properties. Several different theoretical frameworks (e.g., true-score model, and latent trait theory) are available to understand the preceding relationship.

The present research utilizes Bagozzi's (1983) third perspective to analyze the various measurement approaches. This choice was guided by several factors. First, this perspective has evidenced a phenomenal growth in the areas of psychology and educational research over the last twenty years. In fact, Lewis's (1986) observation regarding the development of fifty different models pertains to this perspective. Second, most of this advancement is not reflected in current marketing or consumer behavior research. This is evidenced by the sole dependence on the true-score model for understanding the relationship between the observations and the focal construct (see Dillon et al. 1983; and Fornell and Bookstein; 1982 for exception). Thus it is not unlikely that most researchers are not aware of the potential of many other measurement approaches and its impact on consumer research. Third, there is little discussion within the marketing discipline regarding the systematic errors introduced by the selection of any one approach (e.g., true-score model)

under this perspective. In contrast, several studies have attempted to address the implications of the other two perspectives (Kumar and Dillon 1987; Fornell 1983; Anderson and Gerbing 1982; Phillips 1982). By highlighting and categorizing various approaches for the third perspective, it is hoped that consumer researchers would be more alert to the possibilities and the limitations inherent in the multiple ways of understanding the relationship between the observations and the latent construct.

THE MULTIDIMENSIONAL FRAMEWORK

The proposed multidimensional framework for categorizing the various measurement approaches is displayed in the Table. This framework is a 2X2X2 table, which in turn is composed of two level characteristics each for the latent construct, indicators, and operationalization. We discuss these characteristics below.

Latent Construct

Two possibilities for the nature of the latent construct are considered: categorical or continuous. A continuous latent construct is operative when the underlying unobservable trait is expected to be a random variable such that the objects (e.g., consumers) could possess any bounded or unbounded value of this variable. An example of this type of trait is the attitude toward the brand. Irrespective of the specific measurement utilized, different consumers inherently possess different attitude toward the focal brand. The set of possible attitude values in the population could theoretically range from positive to negative infinity.

In contrast, categorical latent construct is applicable when the underlying trait is conceptualized as consisting of a bounded number of distinct classes. Consider, for example, the involvement construct. Several researchers have discussed involvement from a conceptual standpoint as consisting of two broad classes: High, and Low (Engel and Blackwell 1982). In fact, different models of consumer behavior are proposed for each of the two conditions of involvement (Petty, Cacioppo and Schumann 1983). Clearly, while the measures for the involvement construct are often continuous (e.g., Zaichowsky 1985), the underlying latent construct is conceptualized as categorical. Another empirical example of this conceptualization is provided in a study of residence satisfaction by Dillon et al. (1983). Although "satisfaction" is generally regarded as a continuous trait, these researchers posit that the underlying trait--residence satisfaction--has four distinct (but latent) classes; namely extremely satisfied, moderately satisfied, indifferent, and dissatisfied (p. 212). More specifically, it is hypothesized that all objects (e.g., people) can be categorized into one of four classes based on their perceptions of residence satisfaction. Within each class, objects have homogeneous satisfaction level but not so across classes. Further, in this study the latent (class) trait was measured by three observable items. The family life cycle construct is yet another example of a latent concept with nine distinct classes as proposed by Wells and Gubar (1966). In general, the number of classes can be any finite, positive integer.

TABLE
THE MULTIDIMENSIONAL FRAMEWORK FOR CATEGORIZING
MEASUREMENT APPROACHES

		CHARACTERISTICS OF INDICANTS			
		CATEGORICAL		CONTINUOUS	
		TYPE OF OPERATIONALIZATION		TYPE OF OPERATIONALIZATION	
		REFLEXIVE	FORMATIVE	REFLEXIVE	FORMATIVE
CATEGORICAL	CELL 1	CELL 2	CELL 3	CELL 4	
	LATENT CLASS THEORY	?	?	BY DEFINITION	
NATURE OF THE LATENT CONSTRUCT	GOODMAN'S SCALING MODELS				
	CELL 5	CELL 6	CELL 7	CELL 8	
CONTINUOUS	LATENT TRAIT THEORY	GUTTMAN SCALING CONJOINT ANALYSIS	TRUE SCORE MODEL COMMON FACTOR ANALYSIS LISREL	PRINCIPAL COMPONENTS PARTIAL LEAST SQUARES (PLS)	
	ITEM RESPONSE FUNCTIONS				

Operationalization

Reflexive and formative are the two types of operationalizations considered in the proposed framework. A formative operationalization is defined when the latent construct is conceived as explanatory combination of its indicators (Fornell and Bookstein 1982). The Computerized Status Index (CSI) is an example of such an operational definition for the measurement of social class (Coleman 1983). In this particular index, the latent construct social class is posited as a combination (i.e., sum) of several object characteristics; namely education, occupation, area of residence, and total family income.

When the observed indicators are conceived as being "caused" by the underlying latent construct, a reflexive operationalization is operative (Fornell and Bookstein 1982; Bagozzi and Fornell 1982). Bagozzi (1982) provides an example of the reflexive operational definition. He defines the latent construct, affect toward the act of giving blood, as measured by responses to five semantic differential items. Further, two additional assumptions are implicitly incorporated: (1) the covariation among the five items arises only due to (or is caused by) the underlying latent construct, and (2) the covariation represents a measure of the affect toward the act. Another recent example of the reflexive operationalization is the market maven construct (Feick and Price 1987). The market maven concept attempts to characterize individuals on the basis of their general marketplace expertise, such as information about many kinds of products, places to shop, and other facets of markets. Six items are proposed as a tenable operationalization of the market maven construct. It is shown that the covariation among the six items is due to a single underlying factor, which may be characterized as the market maven construct (Feick and Price 1987). In this sense, an individual's response to the six items is conceived as being caused by the individual's level of general marketplace expertise.

Indicants

The third dimension of the proposed framework represents the property of the indicants used to measure the latent construct. Two possibilities are considered: categorical, and continuous indicators. These possibilities stem from the nature of numbers assigned to the scale used in the particular operationalization. More specifically, numbers that conform to an interval or ratio scale are generally regarded as a continuous indicators (Churchill 1983). An example of continuous indicator is the use of a dollar amount scale to measure respondent's income. Such a scale has a natural zero (\$0.0), and the difference between any two dollar amounts have ratio property. Another example of a similar indicator is the use of sales amount as a measure of salesperson's performance.

In contrast, categorical indicators are obtained when the assigned numbers are from a set of bounded, discrete integers. When these integers possess interval characteristics, they are continuous type indicators. Often consumer researchers obtain responses with category codes corresponding to such phrases as (1) strongly agree, (2) agree somewhat, (3) neither agree nor disagree, (4) disagree somewhat, and (5) strongly disagree, or some other variation of this general theme. There is some debate if indicators of this type have ordinal versus interval properties. From a statistical standpoint, it is difficult to defend that such numbers

have equal interval between adjacent values. Thus Dillon et al., (1983) contend that such measures have only ordinal properties. In this sense, these indicators are categorical.

CATEGORIZING THE VARIOUS MEASUREMENT APPROACHES

The proposed multidimensional framework results in eight cells into which the different measurement approaches can be categorized. The table also depicts some typical approaches that have been classified into one of eight cells using the three dimensions. The purpose of this section is not to categorize an exhaustive list of measurement approaches. Instead, the objective is to show how the framework can be used to classify any given approach, and to expose consumer researchers to the range of possible methods.

Approaches for Continuous Latent Construct and Reflexive operationalization (Cells 5 and 7)

Judging by the published articles, it would appear that most consumer researchers operate within cell-7 of the proposed taxonomy. This cell is characterized by the assumptions of continuous latent construct, reflexive operationalization, and continuous indicators. The true score model (Zeller and Carmines 1980) or the classical test theory (Lord and Novick 1968) represent two approaches for understanding measurement properties of constructs under the preceding assumptions. The true score model in turn involves three different models for representing data: (a) the congeneric measure, (b) the tau-equivalent measure, and (c) the parallel measure models. However, these models are properly nested in each other, with the congeneric model as the most general, and the parallel model as the most restrictive (Joreskog 1971). Joreskog (1971) has also demonstrated that common factor analysis and LISREL represent two techniques to implement the true score models. Both techniques produce underlying factors that are continuous. In addition, these factors represent the shared covariation among a set of continuous indicators. Finally, responses to indicators are seen as "caused" by the underlying factor. Because the aforementioned features are consistent with the characteristics of cell-7, these techniques are classified into this cell. Similar reasons apply for the true score model and the classical test theory (see Lord and Novick 1968 for a detailed discussion).

Note, however, that there are some important differences between the factor analysis or LISREL model and the true score models. In particular, the former techniques can also implement models that are even more general than the congeneric true score model. For instance, true score model allows for only random measurement error in observables, whereas factor analysis models unique as well as random error in each indicator. Also, true score model assumes error terms to be uncorrelated while LISREL allows the possibility of estimating correlated error terms.

While factor analysis and LISREL are two techniques, the true score model and the classical test theory are overall theoretical frameworks to understand measurement properties of constructs when the assumptions of cell-7 are met. One could argue that assumptions of reflexive operationalization and continuous latent construct need to be evaluated from a rather philosophical standpoint. In contrast, the assumption of continuous indicators is statistical in

nature. Rating scales (e.g., Likert) generally do not meet this assumption (Dillon et al., 1983; Stevens 1966). In a recent analysis of this issue, Borgatta and Bohrnstedt (1981) argue that while most rating scales have more than ordinal properties, they may not be truly interval. In practice, however, much research using such scales operates with methods and techniques categorized in cell-7. Thus an implicit (though often technically incorrect) assumption is made that rating scales yield interval data.

However, it is not necessary to make the preceding implicit assumption. When indicators are categorical (e.g., rating scale), approaches of cell-5 are applicable. In this situation, the Latent Trait Theory represents a theoretical framework for determining measurement characteristics of constructs. This theory has been discussed fully by Lord (1980) and Hulin, Drasgow and Parsons (1983). Although these researchers specifically discuss the relevance of this framework to social science constructs (e.g., attitude), applications of Latent Trait theory in marketing are conspicuous by their absence.

In a recent article, Thissen and Steinberg (1986) have reviewed the different models available to implement Latent Trait Theory. Such models are often referred to as Item Response models, since a specific item response function is utilized to relate the observed response and the latent trait. Applications of such models in psychology are growing (see for instance special issue of *Applied Psychological Measurement*, 1982). Because the item response models appear to be especially appropriate for rating scales, marketing researchers must examine these models carefully.

Approaches for Continuous Latent Construct and Formative operationalization (Cells 6 and 8)

The notion of formative operationalizations, and the recognition that some latent constructs in marketing may have such operational definitions is relatively new to marketing (Fornell and Bookstein 1982). In addition, theoretical frameworks for understanding measurement properties under these conditions are relatively less formalized (as compared to Classical Test theory). Although not specifically developed for measures of cell 6, the Guttman scaling model appears to be appropriate for several reasons (Guttman 1950). In particular, Guttman models assume a continuous latent construct, indicators that are of the Yes/No type (i.e., categorical), and a compositional rule (i.e., summate) for determining the underlying trait. Several examples of such measures are available in consumer research. For instance, in a recent study Bearden and Teel (1983) used a Guttman model for characterizing the measurement of consumer complaint behavior construct. For this construct, five indicants were used to obtain a yes or no response based on whether an individual engaged in that particular complaint behavior or not. Finally, the sum of yes responses was used as the measure for the latent construct.

Bagozzi (1983a) argues that the principal components methodology (as opposed to common factor analysis) is suitable when the measures are continuous *and* the underlying latent trait is assumed to be a linear combination of observables. Because a linear combination of continuous measures is also continuous, the principal components technique appears to be appropriate for cell-8 measures. Several constructs in consumer behavior appear to conform to cell-8 conditions. For instance, in a recent study Beatty and

Smith (1987), p. 89) defined the latent construct, total external search (for information) as "a linear combination of four sub-indices:" media search, retailer search, interpersonal search and neutral search. Although these researchers do not utilize principal components to obtain the compositional rule for defining the latent construct, this technique is clearly applicable in such situations. Note, however, that by placing principal components in cell-8, and common factor analysis in cell-7, we are also highlighting key differences in these techniques (see also Bagozzi 1983a).

Wold (1980) and his associates have developed more advanced techniques for handling continuous indicators of formative operationalizations. Such techniques are termed Partial Least Squares (PLS), and they also fall into cell-8 of the proposed framework. Although it is suspected that several marketing constructs may be categorized as cell-8 measures (e.g., social class), applications of PLS in marketing are scarce. Fornell and Bookstein (1982) provide a rare example of the use of PLS to examine the "marketing concentration" construct, and its effects. A formative operationalization of four indicants for this construct is utilized. The four indicants are different measures of concentration ratios from the Census of Manufacturers'. Thus these indicants are continuous and possess ratio property. These characteristics of the marketing concentration construct make it suitable for cell-8 methods, and PLS is the appropriate technique.

Approaches for Categorical Latent Construct (Cells 1 thru 4)

While the use of continuous latent construct is ubiquitous in consumer research, conceptualization of a categorical latent construct is relatively much less popular. As the Table suggests, when the operationalization is formative, and the indicants are continuous, the measurement process reduces to definitional characteristics (cell-4). That is, in this situation the proper conceptualization of the construct should also include formal rules that define how a combination of indicants ought to be grouped into two or more latent classes. Cell-4 methods, therefore, cannot be easily evaluated empirically for their "goodness" of measurement (e.g., reliability).

In contrast, when the indicants are categorical and the operationalization is reflexive, a well developed theoretical framework is available to researchers for the assessment of measurement (cell-1). This framework is often referred to as the Latent Class theory. Goodman (1975) and Clogg (1979) have presented several models that implement this theory. Applications of such models in consumer research are growing. Dillon et al. (1983) provide an example of such models to the measurement of residence satisfaction. The latent construct, as indicated earlier, is hypothesized to constitute four distinct classes. Three categorical indicants with four levels each are employed. Finally, a reflexive operationalization is assumed since the residence satisfaction is posited to be reflected in satisfaction with the house, the landlord, and the neighborhood.

Our review of the literature did not reveal any frameworks especially suitable for cells 2 and 3. From a taxonomical standpoint, these cells are "empty cells" (Hunt 1983). However, measures of cell-2 share several characteristics with cell-4 measures. Importantly, both measures are conceptualized as formative operationalizations of categorical latent constructs. The

differences lie in the type of indicants (continuous/categorical). As noted above, however, in practice researchers often do not draw clear distinctions between the quality of indicants used. Nevertheless a definitional rule for defining the latent construct is appropriate for cell-2 measures. Clearly this definitional rule *ought* to be conceptually different than the one used for cell-4 measures. Because such differences are often not articulated, frameworks of cell-2 have tended to be no different than cell-4 techniques.

In contrast, while cell-3 measures share some features with cell-1, the techniques of cell-1 are generally not applicable to cell-3. In particular, latent class models traditionally were not developed to handle continuous observables. Other techniques (e.g., Guttman scaling) also do not conceptualize measures as defined by cell-3. In published research, however, several examples that treat the measures and the construct in accordance with cell-3 can be found. In almost all cases elementary definitional operations are performed. Consider for example a recent attempt to operationalize the involvement construct (Zaichkowsky 1985). A 20 item measure is proposed. Responses are obtained on a seven point semantic differential scale. Responses are assumed to possess interval scale properties. The underlying construct, involvement, is defined in a two-step process. First, responses to the twenty items are factor analyzed to show that the covariation among items is due to a single latent construct. Although Zaichkowsky (1985) does not explicitly suggest a reflexive operationalization, the preceding operation for defining the latent construct appears to imply such an operationalization. Second, the items are then combined using an equally weighted, linear combination rule. The obtained summed, score is then compared as being above or below a specified value (89.55). This rule results in classifying respondents into a high or low involvement class, implying a categorical latent construct. Thus, this measure appears to be operating under cell-3 conditions.

The preceding discussion clearly highlights the lack of standard procedures for addressing cell-3 and cell-2 measures. Future researchers may wish to address these issues. In addition, it also underscores the need for explicitly articulating the measurement properties of indicants, constructs and operationalizations utilized in a particular study. Because method (i.e., techniques) and measure properties are interdependent (e.g., as in Table), this articulation would insure the use of consistent methods and measures.

DISCUSSIONS AND IMPLICATIONS

The purpose of this study has been to closely examine measurement approaches that attempt to understand the relationship between observed responses and the latent construct they purport to measure. Toward this end, a multidimensional schema is proposed that can potentially classify the various measurement approaches into one of eight cells. This schema serves several objectives: (1) it affords a taxonomy of measurement frameworks; (2) it exposes consumer researchers to the breadth of methods and frameworks available; (3) it helps researchers decide which method(s) is appropriate under a given set of assumptions; (4) it highlights the fact that most consumer research is limited to methods which belong to only one cell (7) of the taxonomy. Implications of these statements are discussed below.

Although measurement issues are beginning to receive increased attention, previous research has not

attempted to develop a taxonomy of different approaches. The present research has posited a multidimensional schema which addresses the preceding gap in consumer research. In addition, the proposed schema utilizes elementary units of measurement--construct, operationalization, and indicants--and their properties. These units have received considerable attention from consumer researchers (Bagozzi 1983; Fornell and Bookstein 1982). Thus by bringing together well examined units into a taxonomical framework, the resulting classification is expected to be both relevant and useful to consumer researchers.

Using the proposed taxonomical framework, the present study has attempted to categorize some typical measurement approaches. While many of these approaches have been independently introduced in the *JCR* (e.g., Latent class models), studies that utilize the different measurement approaches have been less forthcoming. A case in point is the analysis of the last two issues (December and March) of *JCR*. Of all the empirical studies reported, all but one study had employed the true-score model (i.e., alpha reliability) and/or factor analysis for examining measurement characteristics. Earlier issues of *JCR* also depict a similar disproportionate use of cell-7 methods and models. Several implications stem from this analysis.

First, it is probable that consumer researchers are not aware of the range of measurement approaches available, and more importantly how these approaches differ from each other. The proposed framework lays out the different approaches in a way that highlights the differences between them. For instance, the Latent Trait theory (cell-5) is different from the true-score model (cell-7) in the assumptions about the indicants (categorical/continuous). By highlighting the differences, it is hoped that consumer researchers would be better equipped to understand the various measurement methods.

Second, the disproportionate use of cell-7 methods and models by itself is *not* a cause for alarm. If indeed the data meet the assumptions of these methods, the use of cell-7 measurement approaches ought to be advocated. In most cases, however, the data do not satisfy the true-score model assumptions. In particular, rating scales yield categorical data. For such data, our taxonomy suggests that the Latent Trait theory (cell-5) based methods are more appropriate. Unfortunately, such methods have not been explored by consumer researchers. Thus the effects resulting from the use of cell-7 methods for cell-5 data cannot be assessed. Two possibilities exist. Either the measurement characteristics of constructs, in general, are sensitive to such substitution of methods, or the affects can be practically ignored. More definitive statements can be made when these possibilities are examined empirically. Future researchers may wish to address these issues. Finally, the proposed taxonomy may be useful to future researchers in their selection of the appropriate measurement approach. Although the proposed schema should be regarded as a first step toward developing a comprehensive taxonomy, it can potentially afford guidelines in choosing measurement approaches. Once the properties of the three elementary measurement units is identified in a given research design, the taxonomy narrows down the choice considerably. Such guidelines would advocate the use of measurement frameworks that are appropriate, not just convenient. Because good measurement is necessary (though not sufficient) for

affording a valid test of our theories, the use of appropriate approach is central to progress in consumer research. We offer our taxonomy for this purpose.

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Using the Repertory Grid To Assess The Complexity of Consumers' Cognitive Structures

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Abstract

Cognitive complexity has sometimes been used as a personality variable and, from this perspective, has had a relatively minor impact on consumer behavior research. From a different perspective, when viewed as a cognitive structure variable, this same concept may have important implications for consumer behavior research. In order to investigate the applicability of cognitive complexity for consumer behavior, the results from two studies are reported. The first study indicates that the Repertory Grid is a reliable instrument for measuring cognitive complexity, and the second study indicates the presence of a generalizable, as well as a context specific, component of cognitive complexity.

Introduction

In the last decade, there has been increasing interest in cognitive complexity as an individual difference variable. For example, Henry (1980) has related cognitive complexity to information processing accuracy; Klippel, Anderson and Densmore (1976) relate cognitive complexity to brand loyalty; Moschis and Churchill (1979) relate cognitive complexity to teenage consumer skills; and Durand (1979, 1980) relates cognitive complexity to attitude formation.

Cognitive complexity refers to the structural complexity of an individual's cognitive system (Kelly 1955). That is, it has to do with the organizing schemes which individuals use for coding and storing information in memory. Cognitive structures serve a selective function in human information processing by limiting the input of information from the environment. They also act as organizing and moderating variables which control and affect behavior (Bieri 1971). As such, an individual's cognitive structure represents an enduring framework for understanding the environment. In this sense it differs from the ever-changing *content* of cognition such as attitudes and beliefs (Durand and Gur-Arie 1979).

The purpose of this paper is twofold. (1) The first purpose is to investigate the reliability of several measurement procedures which have been proposed for operationalizing cognitive complexity. This is an important step, since most indicators of cognitive complexity must be adapted or altered to be relevant for consumer behavior research. (2) A second purpose of this paper is to determine the degree to which cognitive complexity is a domain specific phenomenon, rather than a generalizable phenomenon. In other words, if a consumer is cognitively complex with respect to sports fishing, to what extent is it likely that this same consumer is cognitively complex with respect to automobile engines? To explore these two objectives, the results of two different studies are reported.

Generalized Cognitive Complexity

Research indicates that a portion of cognitive complexity is domain-specific (Linville 1982a). In other words, a person might have a complex cognitive structure for organizing information concerning one domain (e.g. cameras), but have a much simpler

cognitive structure for organizing information concerning another domain (e.g., automobiles). Degree of complexity may depend, at least in part, upon the type and amount of familiarity and experience regarding a specific domain (Linville 1982a).

There also appears to be a generalized component of cognitive complexity (Tan and Dolich 1980; Wallendorf and Zinkhan 1980; Tan and Lim 1982), which derives from experience in general. On the one hand, extensive experience with cameras, for example, could lead to formation of a complex cognitive structure with respect to cameras. On the other hand, once this cognitive structure is formed for cameras, it may be possible to organize knowledge about other products using a similar cognitive structure. In some situations, structures or dimensions used in one domain may be transferred to other domains. That is, although the content of knowledge in different domains may be substantively different, the structures used to organize these different knowledge bases may be very similar. Thus a cognitive structure constructed for one domain may be transferable to another domain. In this sense, cognitive complexity can be viewed as having the potential for a generalized content.

Going beyond experience in a particular domain, exposure to a wide variety of types and forms of stimulation, including formal education, develops in the individual not only domain-specific cognitive complexity, but also a set of broad evaluative criteria and problem-solving skills which can be used in many domains. The individual who is exposed to a wide variety of stimuli is therefore more likely to be cognitively complex in a broad array of domains. In addition the person is likely to develop what may be called *generalized cognitive complexity* or a set of complex cognitive structures useful in organizing information in a wide variety of domains.

The theoretical notion put forward here is that cognitive complexity derives from generalized exposure to new information as well as specialized or domain-specific experience. In order to tap both of these components empirically, it is most productive to measure cognitive complexity as a domain-specific phenomenon. In order to isolate a generalized component of cognitive complexity, it is necessary to compare an individual's level of cognitive complexity in several diverse domains.

Hypotheses

It is important to determine whether the notion of domain-specific cognitive complexity originally developed by psychologists interested in the domain of social interaction (Kelly 1955; Bieri et al. 1966) can be appropriately and accurately applied in the domain of a particular product class. Thus, the first hypothesis is concerned with the applicability of a frequently used measure of cognitive complexity (called the Repertory Grid test) as consumer products replace social interaction as the domain of interest.

H1: The Repertory Grid measure of cognitive complexity is applicable in product domains as well as other domains.

The second issue to be addressed concerns the extent to which there appears to be a generalized component of cognitive complexity which is transferable across domains. It is the purpose here to determine if cognitive complexity exists across domains. That is, can cognitive structures used in one domain be transferred across domains? This will indirectly address the issue of whether complex cognitive structures are based primarily or even solely on expertise built through experience in a particular domain or whether they are more flexible and fluid.

H2: Complex cognitive structures in one domain will be generalized such that they will contribute to cognitive complexity in other domains.

Measurement Instrument: The Repertory Grid

Sometimes researchers are interested in creating an in-depth measurement instrument that can tap many dimensions of a proposed construct. Other times, however, researchers are interested in creating a brief scale which, while retaining the flavor of more detailed instruments, can be used in conjunction with other measurement procedures so that full networks (with several endogenous and exogenous variables) can be investigated. It is with this second purpose in mind that we consider the present measurement procedure. The goal is to measure cognitive complexity quickly and efficiently, while at the same time reflecting the theoretical richness which underlies the set of longer instruments that have been proposed.

One instrument for measuring cognitive complexity is the Role Construct Repertory Grid Test (Rep Grid). Using a modified version of the Rep Grid, it

is possible to derive 7 different measures of cognitive structure — each based on a slightly different theoretical rationale (Seaman and Koenig 1974). Under the original formulation, the Rep Grid is administered as follows. Respondents are asked to think of a person of the same sex whom they admire. Once the respondent has a clear idea of this admired person in mind, the subject proceeds to rate that admired person along 8 six-point scales with bipolar endpoints. Next, the respondent provides similar ratings with respect to a person of the opposite sex who is not admired. This process continues until 8 types of people have been rated across all 8 bipolar scales. Four of the people rated are positive figures and four are negative figures. A completed Rep Grid is shown in Table 1.

Seaman and Koenig (1974) outline a method by which seven different measures of cognitive complexity can be obtained from the Rep Grid. Three of these measures are based on Fiedler's (1967) work on leadership; three of the measures are based on the work of Bieri, et al. (1966) on personality; and one measure is based on Scott's (1962) work on information theory. Each of these measures is explained briefly.

Bieri et al.'s Positive (Negative) Construct complexity [+CC(-CC)] reflects the subject's ability to use the eight bipolar construct continuums as independent dimensions when rating positive (negative) stimulus objects. Thus, +CC (-CC) is calculated by counting the number of tied attribute ratings for each of the positive (negative) role figures. Ties indicate that the dimensions are not used independently. Thus the higher the +CC (-CC) score, the lower the person's positive (negative) construct complexity. Bieri et al.'s measure of *Total Construct Complexity* (TCC) is calculated as the sum of +CC and -CC.

Fiedler's Most (Least) Preferred score [MPP(LPP)] reflects the subject's tendency to ascribe negative as well as positive traits to a positive stimulus object. Thus, MPP (LPP) reflects cognitive complexity as indicated by a person's tendency to see stimulus objects which are regarded positively (negatively) as also possessing some

Table 1
A Repertory Grid

Scales 6 -- 1	Stimulus Objects							
	A	B	C	D	E	F	G	H
Outgoing-Shy	4+	2	4+	6+	6+	6+	4+	2
Adjusted-Maladjusted	5+	2	5+	1	5+	2	4+	2
Decisive - Indecisive	2	3	6+	2	6+	3	6+	4+
Friendly - Unfriendly	5+	1	5+	3	6+	4+	2	4+
Interested in others- Self-absorbed	4+	6+	6+	2	6+	4+	5+	1
Cheerful-Ill-humored	6+	3	5+	2	5+	2	4+	2
Dominant-Submissive	4+	2	5+	1	6+	4+	6+	4+
Considerate-Inconsiderate	3	4+	6+	2	5+	3	5+	3
Totals	33	23	42	19	45	28	36	22
Number of Ties	4	4	9	7	13	5	5	6

- A - Close friend of the same sex.
- B - Hard to like person of the opposite sex.
- C - Admired friend of same sex.
- D - Felt uncomfortable around person of same sex.
- E - Close friend of opposite sex.
- F - Hard to like person of same sex.
- G - Admired friend of opposite sex.
- H - Felt uncomfortable around person of opposite sex.

negative (positive) characteristics. MPP (LPP) is calculated by summing the ratings within each column of positive (negative) figures and then adding together these column totals and computing their average. Fiedler's two measures are combined into an overall measure, ASO, which is calculated by subtracting LPP from MPP.

The final measure used in this research is Scott's R, which represents the number of distinctions (in bits) that the subject is making. The formula for calculating this measure is:

$$R = [\log_2 N - 1 / N (\sum n_i \log n_i)] / \log_2 N \quad (1)$$

Where N is the total number of attributes and n_i is the number that appears in a particular combination of groups. R is derived from information theory and identifies the number of independent dimensions present within an individual's cognitive domain. This measure may be interpreted as the minimum of independent binary dimensions needed to reproduce a subject's original ratings along the Rep Grid (Linville and Jones 1980). The use of Scott's R does not commit the researcher to the untenable assumption that consumers actively think in terms of independent binary categories. This measure is simply a statistical indicator of the complexity of a set of ratings (Linville 1982b).

Procedure

Two research studies were completed. The first study is concerned with measurement issues, and, in the interest of devising an improved measurement procedure for cognitive complexity, reliability issues are addressed (see hypothesis one). The second study is relevant for hypothesis two and is designed to investigate the extent to which cognitive structure is generalizable, as opposed to domain specific.

First Study

Method

If all of the measures from the Rep Grid are tapping a single underlying construct, then it is possible to standardize these scores and combine them additively to form a single measure of cognitive complexity. The advantage of combining all the measures is that convergent validity can be assessed. By operationalizing complexity with multiple measures which are based on different computational formulae and different theoretical foundations, the advantages of a multi-method approach are added (Campbell and Fiske 1959). Thus, using one Rep Grid, an overall measure can be obtained without any increase in the magnitude of the task for the respondent.

However, the reliability of this composite scale (sum of standardized scores) must still be assessed. This is the first task of the first study. In order to assess reliability, five of the seven complexity measures are combined. Only five are considered, since the remaining two are redundant. That is, TCC is calculated as the sum of +CC and -CC; likewise, ASO represents the difference between MPP and LPP. For this reason TCC and ASO, as redundant measures, are excluded from the reliability calculations because their inclusion would unjustifiably inflate any estimates of reliability.

The Rep Grid was administered to three groups of subjects: two groups of college students (n = 80 and n = 106) and one group of adults (n = 82). The first group completed two Rep Grids—one for the domain of

social interaction (similar to Kelly's original conception of cognitive complexity) and one for the domain of athletic shoes. In this way, it is possible to compare the original form of the Rep Grid with the adapted form which is more appropriate for consumer behavior applications. The second group of students and the group of adults completed a Rep Grid in the domain of calculators. This facilitates comparison of the adapted form across groups and is an important step by allowing the determination of whether using the Rep Grid on a less homogeneous sample (the adults rather than the college students) produces a similar level of reliability. That is, when a research effort expands beyond a sample of students, the measured reliability of the instrument may decrease merely because the sample is less homogeneous. To the extent that such a decrease occurs, the instrument is less reliable than would be indicated using a student sample alone.

Results

To calculate coefficient alpha, the five relevant complexity scores (+CC, -CC, MPP, LPP and R) were standardized and summed to form a composite index. The resulting estimates for coefficient alpha are displayed in Table 2.

Table 2
Estimates of Coefficient Alpha

Group	Domain	Sample	Alpha
I	Athletic Shoes	Students; n=80	.729
I	Social Interaction	Students; n=80	.684
II	Calculators	Students; n=106	.788
III	Calculators	Non-Students; n=82	.786
Average value for coefficient alpha =			.746

In three out of four cases, these estimates are above .70 and in all cases are above .60. In terms of reliability, the consumer behavior formulation of the Rep Grid using product brands rather than people as the stimulus objects has a reliability coefficient of .729. This seems to be at least as good as Kelly's original formulation of the Rep Grid which has an alpha coefficient of .684 as measured here. In addition, there is little absolute difference in the reliability coefficients between the student group (.788) and the non-student group (.786) when using calculators as the stimulus object. In summary, the reliability of the composite measure of cognitive complexity appears to be satisfactory.

Second Study

Method

In the second study, the domains of popular literature and cameras are studied in addition to the more frequently studied domain of social interaction. The purpose of this second study is to examine cognitive structure across all three domains and to determine whether cognitive complexity has a generalized component as well as domain-specific component.

Three Rep Grids were administered to 126 undergraduate students. Each Rep Grid measured the respondent's cognitive structure with respect to a different domain. The domains (popular literature, cameras, and social interaction) were chosen to represent maximally dissimilar content. The domain of social interaction was chosen because it is the domain

originally investigated by Kelly (1955) in his research on cognitive structure. By examining correlations across domains, it becomes possible to search for a generalized component of complexity.

Results

When comparing correlations across domains, it does not make sense to include the redundant measures. For example, if +CC for cameras correlates highly with +CC for social interaction, then likewise TCC for these two contexts would also correlate highly. For this reason both TCC and ASO, as redundant measures, are excluded from the analysis across domains.

Table 3 presents the correlations between the cognitive complexity measures in all three domains. With respect to social interaction and popular literature, significant coefficients ($p < .05$) are observed among the Bieri measures (4 out of 4), and the Bieri measures are also significantly associated with 3 other indicators. Altogether, 11 of 25 coefficients achieve statistical significance; the largest coefficient is .27. Notice also that +CC, -CC and MPP correlate negatively with other indicators since they represent inverse measures of cognitive complexity.

With respect to the domains of cameras and popular literature, ten of the 25 coefficients achieve statistical significance ($p < .05$); the highest coefficients are observed in the .20 to .33 range. Bieri's measures correlate highly among themselves (3 out of 4 significant at the .05 level); and Fiedler's measures also correlate highly among themselves (2 out of 4 significant at the $p < .05$ level). In addition, Scott's

information measure correlates well with both a Bieri and a Fiedler measure.

The most encouraging results are obtained when camera cognitive complexity measures are compared with social interaction cognitive complexity measures (see Table 3). In this case, 15 out of 25 coefficients achieve statistical significance ($p < .05$), and the largest of these are in the .28 to .41 range. The Bieri measures are significantly related to all other CC measures. The same pattern is observed for the Scott and Fiedler measures. When looking within the Fiedler measures, all 4 out of 4 correlations are high.

In summary, some support is found to indicate that the cognitive complexity has a generalized component. Between 4% and 16% of the variance in the cognitive complexity measures seems to be accounted for by this generalized component. One reason for this low amount of variance explained may be that many of the respondents in this survey (the college students) had high education levels, and this may have restricted the range of the cognitive complexity measures. Especially encouraging are the results associated with social interaction and cameras. Social interaction represents the original conceptualization and cameras represent the type of domain for cognitive complexity that is most relevant for consumer researchers. Also, since the Rep Grid measures seem to behave in a similar fashion across all three domains, this procedure appears to be appropriate and applicable to consumer behavior research problems.

Table 3
Complexity Correlation Between Domains

		Popular Literature					
		+CC	-CC	MPP	LPP	R	
Social Interaction	+CC	.20c	.22c	.12	-.05	.03	
	-CC	.22b	.18c	.22c	-.03	-.22c	
	MPP	.06	-.04	.19c	.10	-.02	
	LPP	-.19c	-.18c	.01	.21c	-.05	
	R	-.21c	-.03	-.13	.07	.15	
		Popular Literature					
		+CC	-CC	MPP	LPP	R	
Cameras	+CC	.21c	.20c	-.03	-.18c	-.22c	
	-CC	.09	.26b	.07	-.28b	-.11	
	MPP	.03	.12	-.01	-.27b	.19c	
	LPP	.05	-.21c	-.11	.33a	.10	
	R	.11	.07	-.04	-.08	.04	
		Cameras					
		+CC	-CC	MPP	LPP	R	
Social Interaction	+CC	.35a	.41a	.20c	-.19c	-.19c	
	-CC	.18c	.11	.16	.04	-.01	
	MPP	.27b	.22c	.21c	-.17	-.26b	
	LPP	-.29b	-.25b	-.26b	.11	.28b	
	R	-.11	-.20c	-.01	.15	.07	

N = 126

a - Associated t statistic is significant at $p < .001$

b - Associated t statistic is significant at $p < .01$

c - Associated t statistic is significant at $p < .05$

Discussion

In the psychological literature cognitive complexity has often been discussed as a personality variable (Vannoy 1965). Within this perspective, cognitive complexity has sometimes been viewed as a quite general trait, pervading all realms of cognitive functioning. In this sense cognitive complexity, as a psychological concept, has suffered from some of the same criticisms which have limited the applicability of personality variables to consumer behavior research (Kassarjian 1971).

In contrast, other researchers (e.g., Scott 1963; Zajonc 1960) have viewed complexity as a somewhat less enduring state applying only to a particular cognitive domain. This latter view seems to hold the most promise for consumer behavior researchers.

The results reported here suggest that it is appropriate to use an existing measure of cognitive complexity for consumer research. Based upon the reported evidence, it appears that the Rep Grid is reliable when used in both product and social interaction domains. Coupled with the objective scoring procedures associated with the Rep Grid, these findings suggest that the Rep Grid is a useful tool for investigating cognitive complexity in studies of consumer behavior. It should be noted that these conclusions are consistent with those in earlier studies (Tan and Dolich 1980; Tan and Lim 1982).

The study of knowledge structures can be important since these structures may guide the processing of information, evaluation of stimuli, and choice processes. The Repertory Grid, as modified here, may prove to be a valuable research tool for exploring one property of cognitive schema: namely, schema complexity. In particular, this research extends the methodology employed in much of the schema literature by treating schema complexity as a continuous rather than a discrete variable.

In the future, cognitive complexity should continue to be viewed as a domain-specific phenomenon, although there is a small component of cognitive complexity that may be attributable to a generalized element. That is, there may be some transfer of structure between domains. The exact nature and process of this transfer remain unexplored. Investigation of other domains may expand the usefulness of this concept as an individual difference variable and predictor of consumer behavior.

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Measuring the Meaning of Consumption Objects: An Empirical Investigation

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Abstract

Since Holbrook and Hirschman's (1982) elucidation of the experiential perspective, the "meaning" of consumption objects has been accorded renewed prominence in consumer research. Surprisingly few studies explicate meaning as a scientific construct, however. Using ordinary consumption objects, this paper proposes a definition of meaning and a measure -- MOCOM -- derived from that definition. An initial test of MOCOM (Measure Of Consumption Object Meaning) suggests that it elicits comparatively rich qualitative data and that it also has desirable psychometric properties.

Introduction

The proposition that consumers respond according to the meanings they ascribe to marketplace stimuli was, until Holbrook and Hirschman's (1982) elucidation of the experiential perspective, accepted virtually without question. As a consequence, only a few consumer researchers (e.g., Csikszentimihali and Rochberg-Halton 1981; Douglas and Isherwood 1979; Friedman 1986; Hirschman 1980; Kernan and Sommers 1967; Levy 1959; 1981; McCracken 1986; Mick 1986) have even discussed, much less studied meaning. This suggests that (1) there is a gap in appropriate theory and methodology and/or (2) that the influence of meaning is thought to be so obvious that little is to be gained from its study.

To the extent that we accept the notion that objects have subjective meanings, we must simultaneously reject the account that meaning's influence on consumers is too obvious to study. As though by default, then, it appears that consumer researchers have not explicated meaning as a scientific construct because they have lacked the requisite theory and methodology. Before meaning can assume its place "at the nucleus of consumer behavior" (Mick 1986), it must be formalized as a construct that reflects the key characteristics of *consumption* phenomena -- i.e., one that incorporates people's subjective reactions to consumption experiences, those stimulated by objects and/or behaviors. This requires that we overcome the limitations of past efforts, which typically have yielded either rich qualitative content (e.g., anthropological and psychoanalytic approaches) or well-behaved quantitative representations (e.g., semantic differentiation) and develop a procedure that simultaneously provides both these properties.

This paper is an initial attempt to formalize meaning as a scientific construct. We propose a definition of consumption-object meaning and a measure based on that definition. We also offer the results of an empirical study as initial evidence of our conceptualization's validity.

Toward A Definition of Object Meaning

Kleine and Kernan (1987) have outlined the multidisciplinary traditions through which the meaning construct has been studied. Although they identified two dimensions -- contextual sensitivity of meaning and level of analysis -- that distinguish the research traditions reviewed, they fail to specify which research tradition (or combination) should serve as the foundation

for developing the meaning construct in a consumption context. Ogden and Richards' (1953) "triangle of reference", however, explicates a key assumption common to most researchers, regardless of tradition: the relation between a *referent*, the perceived stimulus (e.g., an automobile), and a *symbol*, the result of the referent's interpretation (e.g., "that's a Porsche 924S"), is an indirect one. Referent and symbol are related through *thought* (or reference). Meaning is not inherent in the referent; it is ascribed to it by the interpreter.

Yet Ogden and Richards' triangle raises two questions important in the development of a definition of meaning. First, *who* is doing the thought (or reference); i.e., what is the *level* of analysis? Kleine and Kernan suggest that most researchers determine this by their training -- those of a psychological and/or social-psychological tradition tend to prefer a micro (i.e., individual) level of analysis, while those trained in the anthropological tradition prefer a macro (e.g., cultural system) level of analysis. Although this paper adopts the individual level of analysis, it recognizes the embeddedness of the individual within a social world. The second question raised by the triangle is what type of *referent* does the researcher wish to examine; i.e., what is the *unit* of analysis? Although objects and behaviors are paramount in the experiential perspective, the present research emphasizes the consumption *object* as the analytic unit, for reasons of tractability. This combination of individual levels of analysis and consumption-object stimuli influences our definition of meaning and, consequently, the type of measure proposed. However, it presents us with an opportunity to fill an important gap in the literature. Most meaning research uses words as the focal stimuli. The meaning individuals ascribe to objects is perforce an under-researched phenomenon.

Our definition of object meaning incorporates three essential characteristics: (1) polysemy; (2) contextual sensitivity; and (3) consensus. *Polysemy* refers to the fact that a given object can mean many things -- baking soda, for example, can be a refrigerator deodorizer, a dentifrice or an antacid. *Contextual sensitivity* suggests that the meaning of a turkey on a Thanksgiving Day dinner table probably differs from that of a turkey placed on a dinner table during mid-May. And *consensus* refers to the fact that, even though each person holds idiosyncratic information about an object, some minimal amount of object information (meaning) must be shared by people in order for them to communicate about the object. These characteristics, plus the forgoing discussion, locate our conceptualization of meaning in what Kleine and Kernan call a social-psychological research tradition. Apropos of that tradition is Szalay and Deese's (1978) characterization of meaning as an individual's subjective reaction to a stimulus, composed of certain salient elements. Although they propose no a priori structure regarding these elements (preferring instead to rely on post hoc "semantic clustering"), Kernan and Sommers (1967) advance two orthogonal dimensions of an object's meaning -- its attributes and performance potential. Attribute refers to the physical dimension of meaning, to

one's perception of an object's palpable characteristics (baking soda is white and powdery). Performance refers to the functional dimension of meaning, to one's perception of the object's action potential or what the object can do or be used for (a dentifrice or an antacid, in the case of baking soda). The Szalay and Deese and Kernan and Sommers definitions of meaning are complementary. Both define meaning as an aggregate perception. Szalay and Deese suggest that this perception consists of a constellation of "reactions" that vary in salience, while Kernan and Sommers introduce the possibility that these "reactions" are manifestations of attribute and performance. Thus we propose that *the meaning to an individual of a consumption object is that person's aggregate perception of the object. One's perception, in turn, consists of two dimensions: an interpretation of the object's physical attributes and of its action potential. These perceptual dimensions vary in salience among objects and individuals and according to the context in which the object is perceived.*

A Measure of Consumption Object Meaning

Based on the preceding discussion, we can identify several properties a measure of consumption-object meaning should possess. It should: (1) adduce the attribute and performance dimensions ascribed to the object; (2) determine the salience of those dimensions; and (3) distinguish meaning that is shared from that which is idiosyncratic. Additionally, the measure should be amenable to large samples.

The *method of continued associations* (Szalay and Deese 1978) provides a foundation from which to build such a measure. The method requires subjects to produce all the one-word stimulus-bound responses they can muster within a 60-second interval. These responses are the salient elements of the object's meaning. Since a subject's first responses are assumed to be more dominant (i.e., salient), each response is assigned a dominance score (DS) that is a measure of its relative salience. In our adaptation of the procedure -- which we designate MOCOM (for Measure Of Consumption Object Meaning) -- subjects' responses are then categorized as attribute or performance, the two proposed dimensions of meaning. Three totals, useful for both inter- and intra-subject and/or object analysis, can be computed: a total DS for the attribute dimension, a total DS for the performance dimension, and a total DS for all meaning elements. Thus, the procedure can be used to assess the idiosyncratic meaning perceived by an individual or that shared by a group of individuals.

An Empirical Test

A study was conducted to assess the proposed MOCOM and the conceptualization upon which it rests. We admonish the reader that, in this initial test, our focus was *not* on the actual meanings subjects ascribed to the focal objects (although qualitative results are available to adduce these). Following scaling convention, our quantitative results portray meaning in the form of inter-object *similarities*, rather than in terms of absolute object perceptions.

Hypotheses

Two measures that purport to measure the same construct should be highly correlated. To explore this psychometric property of MOCOM, the semantic differential (Osgood, Suci, and Tannenbaum 1957), a measure of meaning with which most consumer

researchers are familiar, was chosen as a criterion measure of meaning. Thus:

H1: MOCOM and the semantic differential will be significantly correlated.

Kernan and Sommers (1967) propose that one's attitude toward an object ("value" in their terminology) is a function of an object's perceived meaning -- i.e., of attribute and performance. Thus, the meaning construct should be discriminable from the attitude construct. Szalay and Bryson (1974) present an analysis in which this distinction is supported. Since Osgood et al. make no assertions regarding the functional relationships among the three dimensions of the semantic differential, the second hypothesis is advanced:

H2: The correlation between MOCOM and a reduced form of the semantic differential, composed of the activity and potency dimensions, will be significantly greater than the correlation between MOCOM and the full, three-dimensional, semantic differential.

Our definition of meaning postulates two dimensions of perception that underlie meaning: attribute and performance. Hence a goal of this study is to explore the psychological reality of these dimensions. If consumers' perceptions of consumption objects are characterized by these two dimensions it follows that the responses produced by subjects on the continued-association task should be characterizable as either attribute or performance. Thus:

H3: The meaning dimensions revealed via the method of continued associations can be reliably characterized as either attribute or performance.

Common sense indicates that any measure of meaning should reveal every object to have a unique meaning and some objects to be more similar in meaning than others. It follows that consumption objects determined a priori to be similar should be indicated by the meaning measure to be more similar than objects deemed dissimilar, a priori. Two natural categories of consumption objects were identified -- food and clothing -- to assess whether the proposed MOCOM possesses this characteristic. In order to test the efficacy of our measurement procedure (and to avoid any affect-laden contamination that might result from subjects' familiarity with branded stimuli), three generic objects were selected to represent each category. A black fedora, a white cotton pullover sweater with a button-up v-neck, and a "dirty buck" shoe were selected to represent the clothing category. The food category was represented by one-quarter pound of uncooked #19 linguine, a ripe banana, and a slice of whole wheat bread. Thus, Hypothesis 4:

H4: Objects within a natural category should be perceived as more similar in meaning to other objects within that category than to objects from other categories (i.e., a given clothing item should be more similar in meaning to other clothing items than it is to any food items).

Table 1
Mean Factor Scores For Each Object on Each Semantic Differential Dimension Stimulus Object

Dimension*	Hat	Sweater	Shoe	Pasta	Banana	Bread
Evaluative	0.815	-0.287	0.222	-0.406	-0.237	-0.108
Activity	-0.734	0.437	0.436	-0.273	0.033	0.151
Potency	-0.682	-0.386	-0.457	0.525	0.436	0.581

*The scales are: for Evaluative: good-bad, pleasant-unpleasant, positive-negative, admirable-deplorable, and valuable-worthless; for Activity: restless-quiet, agitated-calm, vibrant-still, chaotic-ordered, and fast-slow; and for Potency: large-small, masculine-feminine, robust-delicate, strong-weak, and powerful-powerless.

The notion of inter-object meaning similarity raises the interesting question of which dimension, attribute or performance, is meaning similarity largely a function? We make no prediction regarding this intriguing question.

Procedure

Ninety-six students at a Midwestern university were subjects for this study. They were processed in four groups.

Each subject received a packet containing: (1) instructions for the continued-association task; (2) seven continued-association response forms; (3) instructions for the semantic differential task; and (4) seven semantic-differential response forms. The three dimensions of the semantic differential were operationalized with 34 bi-polar adjective scales selected because of their frequent use in studies reported by Osgood et al. (1957).

Subjects first responded to a trial object, an 18" inflatable lobster, to familiarize them with the continued-association task. They were then exposed to the six experimental objects, one at a time, in one of two random orders, for 60 seconds. Subjects recorded their associations during this time. Stimuli were referred to only by an identifying number. Subjects were then instructed how to use the semantic differential. They then responded to the warm-up object and then to the six experimental objects. No time constraint was imposed on this task. A new stimulus object was presented when all subjects were ready.

Data Preparation

Data from the 34 semantic-differential scales were reverse coded where necessary and a confirmatory factor analysis (SAS procedure) was performed, with a three-factor solution specified. Both eigenvalues and a scree test clearly indicated the appropriateness of the three-factor solution. Following Osgood et al., the five scales with the highest loading on each of the three semantic-differential factors were retained for subsequent data analyses (see Table 1).

Because an object's meaning is its location within the three-dimensional semantic space, the mean factor scores for each stimulus object on each dimension of the semantic differential were computed (Table 1). Inter-object meaning similarity is also of interest so D_{ij} s, or inter-object Euclidian distances within the three-dimensional space, were calculated from the mean factor scores (Table 2). Note that *smaller* values of D_{ij} indicate *greater* inter-object meaning similarity.

Table 2
Inter-Object Distances Within the Three-Dimensional Semantic Space

Hat	0.00					
Sweater	1.64	0.00				
Shoe	1.33	0.51	0.00			
Pasta	1.78	1.16	1.36	0.00		
Banana	1.72	0.92	1.08	0.36	0.00	
Bread	1.80	1.02	1.13	0.52	0.23	0.00

Data produced by the continued-association task require extensive preparation prior to analysis. The desired result is a list, for each stimulus object, of associations, and their dominance scores. These scores were assigned according to Szalay and Deese's recommendation: 6 to the first response produced by a subject, 5 to the second response, 4 to the third response, 3 to the fourth through seventh responses, 2 to the eighth and ninth responses, and 1 to each subsequent response. Dominance scores for common responses were summed across subjects. Affinity refers to the degree to which persons see relations of any sort between any two stimuli and is operationalized as the amount of overlap between two response lists (i.e., the number of meaning elements two objects have in common). Affinity is thus analogous to meaning similarity and is assessed by means of an index. Calculation of the inter-object affinity index involves summing dominance scores across the overlapping elements and across stimuli. This total is then divided by the sum of the total dominance scores of the objects being compared. The resulting index value is the proportion of the combined total dominance scores accounted for by the affinity relations. The index has a theoretic range of zero to one and increases in value as inter-object affinity increases. The affinity index for each pair of stimulus consumption objects is given in Table 3.

Table 3
Inter-Object Affinity Index Values

Hat	1346					
Sweater	0.243	1660				
Shoe	0.101	0.314	1617			
Pasta	0.047	0.011	0.024	1861		
Banana	0.055	0.024	0.032	0.143	1812	
Bread	0.000	0.011	0.025	0.234	0.209	1964

Note: Main diagonal values are the total dominance scores.

Results

With Hypothesis 1 we predicted that the correlation between MOCOM and the semantic differential would be significantly greater than zero. Because the affinity index (representing MOCOM) increases and D_i (representing the semantic differential) decreases as inter-object meaning similarity increases, a *negative* correlation is expected. To test this hypothesis, the off-diagonal elements of the affinity-index matrix (Table 3) were correlated with the corresponding elements in the matrix of inter-object D_i s in the three-dimensional semantic space (Table 2). Since the obtained Pearson correlation of -0.52 is significantly greater than zero ($p < .05$), the data are consistent with Hypothesis 1: There is some evidence that MOCOM has convergent validity.

With Hypothesis 2 we advance a stronger assertion than in Hypothesis 1, namely that the correlation between MOCOM and a two-dimensional version of the semantic differential, composed of the activity and potency dimensions, will be significantly greater than the correlation explored in Hypothesis 1. (This follows from the fact that MOCOM associations -- which are categorized into attribute or performance (or "other") dimensions -- do not measure affect directly.) To test this hypothesis the off-diagonal elements of the matrix of inter-object D_i s in the two-dimensional semantic space (Table 4) were correlated with the off-diagonal elements of the matrix of inter-object affinity indices (Table 3). Inter-measure correlations (all significant at $p = .05$) are summarized in Table 5. The difference between the two theoretically important correlations, -0.52 and -0.73, is statistically significant (Fisher's $z = 2.41, p < .01$) -- a result consistent with Kernan and Sommers' assertion (and our H_2) that the meaning construct is discernible from the attitude construct. This theoretic consistency increases our confidence that MOCOM is indeed a measure of meaning, hence subsequent analyses employ the reduced, two-dimensional space.

Table 4
Inter-Object Distances Within the Reduced (2-D) Semantic Space

Hat	0.00					
Sweater	1.21	0.00				
Shoe	1.19	0.07	0.00			
Pasta	1.29	1.15	1.21	0.00		
Banana	1.36	0.92	0.98	0.32	0.00	
Bread	1.54	1.01	1.08	0.43	0.19	0.00

Table 5
Correlations Between Meaning Measures

3-D Semantic Differential	1.00		
2-D Semantic Differential	0.94	1.00	
Affinity Indices	-0.52	-0.73	1.00

Hypothesis 3 seeks to assess the psychological reality of attribute and performance as dimensions of meaning. To test H_3 , standard measure-development procedures were followed: operational definitions of attribute and performance were developed (see Table 6) and two trained judges applied the coding categories to subjects' responses to each of the six focal objects. Inter-coder agreement averaged 85%, a rate acceptably

high for an exploratory study. Unresolved disputes, refereed by one of the authors, were categorized as "other." The distribution of attribute and performance, expressed as a percent of the total dominance score for each stimulus object, is presented in Figure 1. Overall, the attribute and performance dimensions capture 87% of the total dominance score and 96% of the responses, a result that strongly supports H_3 -- a consumption object's psychological meaning is recoverable with its attribute and performance dimensions.

Hypothesis 4 contends that MOCOM should recover the two natural categories of stimulus objects; that objects within a category will be judged more similar to other items within that category than to items in the other category. For example, a shoe should be indicated as more similar to other clothing items than to any food item.

Using the reduced-space semantic differential measures, Figure 2 plots the locations of the stimuli within the semantic space. (Identical inter-object similarity can be gleaned from the distance measures in Table 4.) Figure 2 reveals the food category to be recovered nicely -- its three items are clustered. In contrast, the clothing category was not completely recovered -- the sweater and the shoe are quite similar but the hat has a very dissimilar meaning. A reading of subjects' association data suggests the explanation that, compared to the shoe and sweater, the hat is an extremely expressive consumption object. Accordingly, a two-group (food and clothing) MANOVA was performed (SAS's GLM procedure). The significant MANOVA ($F(2, 577) = 102.59, p < .01$) indicates that the group mean vectors on activity and potency factor scores differ. Univariate ANOVAs reveal a significant effect for potency ($F(1, 578) = 204.08, p < .01$) but not for activity ($F(1, 578) = .50, p > .01$) -- within-category variance exceeded between category variance on this latter dimension, reinforcing our previous observation that the clothing category was not recovered well by the semantic differential. Thus, a three-group MANOVA (splitting out the hat) was performed and, as expected, significant univariate effects were observed on both the

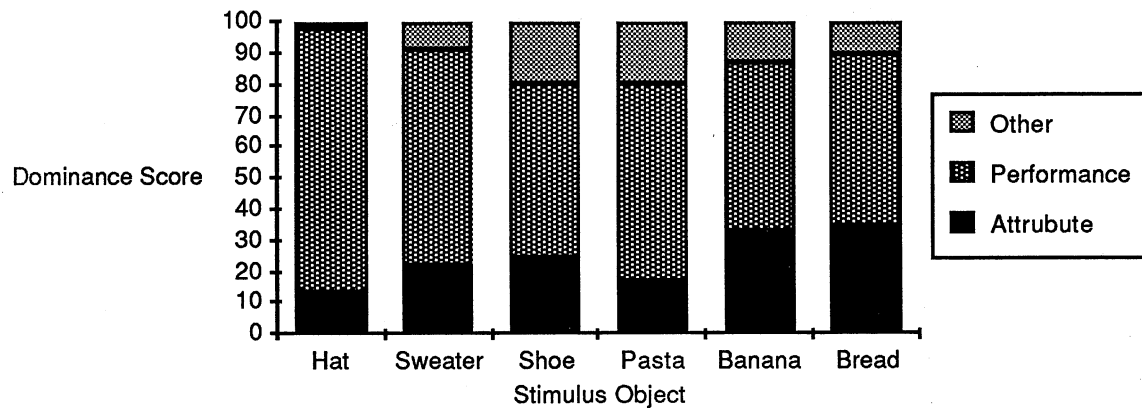
Table 6
Operational Definitions of Attribute and Performance

ATTRIBUTE characterizes associations that describe *physical characteristics* of the stimulus object (e.g., size, color, shape, weight, and flavor) as presented to the individual. Note: the common name for the object (e.g., "car" in response to an automobile) is not an attribute.

PERFORMANCE characterizes associations that describe functional characteristics of the stimulus object. Associations that provide answers to these questions are performance: What does one do with the object? How does the object go about doing what it does? What does the object do for or to an individual who consumes it? Who uses or might use the object? In what circumstances or situations might one use or encounter the object? What other objects are likely to be encountered with or used with the object.

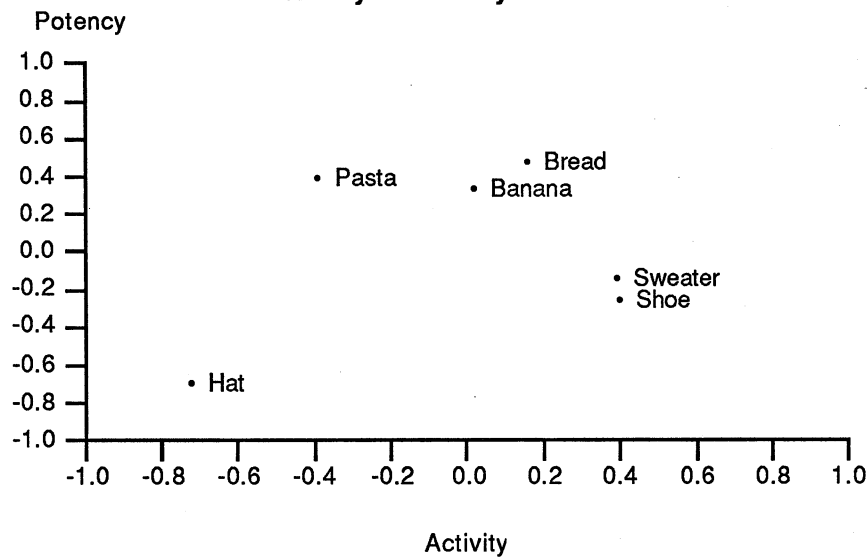
OTHER characterizes any association captured by neither attribute nor performance.

Figure 1
Percent of Total Dominance Score Accounted for by the Meaning Dimensions



Note: Total Dominance Scores are given in Table 3

Figure 2
Mean Factor Scores
Activity and Potency Dimensions



activity ($F(2, 573) = 60.23, p < .01$) and potency ($F(2, 573) = 113.53, p < .01$) dimensions. Thus, the semantic differential did a good job of recovering our food category but it did not completely recover our clothing category.

To assess the efficacy of MOCOM relative to Hypothesis 4, we redirect the reader's attention to Table 3, the matrix of inter-object affinity indices. Although casual observation of that matrix reveals the clothing items to be similar, the food items to be similar, and little meaning similarity between objects in different categories, a statistical test is necessary to establish the existence of our natural categories. Accordingly, a Mann-Whitney U test was used, with the null hypothesis that affinity indices of pairs of objects within a category

are from the same distribution as affinity indices of pairs of objects from different categories. Comparing either the three within-clothing cells to the nine between-category cells or the three within-food cells to the nine between-category cells, the null hypothesis must be rejected ($U = 0, p < .01$). This result, supportive of Hypothesis 4, indicates that MOCOM recovered the two natural categories nicely. Even the hat is indicated to be more similar to other clothing items than it is to any of the food items. In this respect, our proposed measure has out-performed the semantic differential.

Yet the *nature* of inter-object similarity remains to be established. The semantic differential reveals, for example, that the sweater and the shoe (the two objects most similar in meaning) are moderately high on activity

and low on potency. We could extend this investigation by examining the respective factor scores for these objects, but this is a cumbersome procedure that guarantees little by way of interpretable information. In contrast, we can use the lists of common responses from which MOCOM's affinity indices are derived and discover a richness the semantic differential cannot approach. The sweater and the shoe, for example, share these elements: casual, clean, comfortable, conservative, fall, L. L. Bean, man's, nice, plain, preppy, soft, stylish, ugly, warm, and worn. Thus, these two objects share warmth, conservativeness, and preppiness, and are worn by men in the autumn. Whereas the semantic differential requires researcher specification of scales, the MOCOM "provides" the researcher with scales -- that are texture-laden with qualitative interpretability in the bargain.

But MOCOM does not restrict us to qualitative analysis. By separating subjects' associations into their attribute, performance, and "other" dimensions we can compute affinal relations (shared dimensions) among the objects. Table 7, which displays such relations, reveals that meaning similarity within a category is dominated by performance while such similarity as exists among objects from different categories is largely a function of attribute. In other words, "natural" categories seem to consist of objects that *do* the same thing.

A series of χ^2 tests supports this interpretation. The distribution of attribute and performance does not differ across the three objects representing each natural category (food category: $\chi^2(2) = 6.75, p > .05$; clothing category: $\chi^2(2) = 2.34, p > .05$) nor do the distributions of attribute and performance differ between the two natural categories ($\chi^2(1) = 1.70, p > .05$). This indicates that the six cells representing the two categories can be pooled. A χ^2 test to explore homogeneity of the distributions of attribute and performance in the nine between-category cells could not be performed because all cells have expected values less

than five. Thus, those nine cells were collapsed into a single between-category group. The dramatically significant, but hardly surprising difference ($\chi^2(1) = 262.99, p < .01$) between the distributions of attribute and performance in the pooled between-category cells and the pooled within-category cells is illustrated in Figure 3.

Thus, Hypothesis 4 seems supported. MOCOM not only recovered our a priori defined categories, it did a better job of reproducing them than did the semantic differential. We also explored the insight that each measure can yield into the nature of inter-object meaning similarity. In this regard we found MOCOM to provide richer information than the semantic differential. Exploring the inter-object similarities revealed by our proposed measure further, we assert tentatively that similarities between objects within a natural category lie along the performance dimension of meaning. In contrast, meaning similarity, if any, between objects from different categories derives from the attribute dimension of meaning -- what physical attributes the objects appear to share.

Discussion

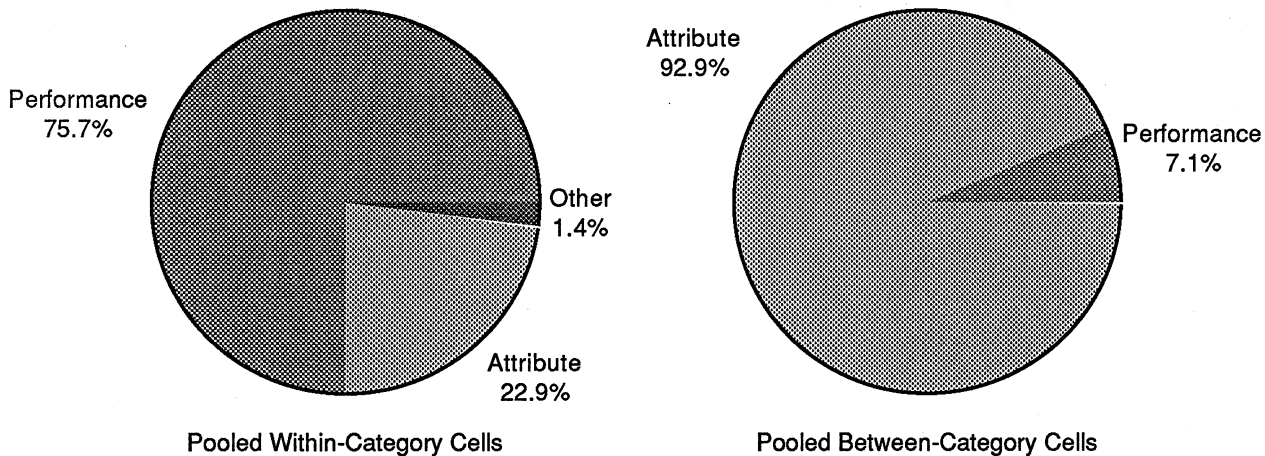
Although this exploratory effort encourages us that our definition and measure of consumption-object meaning is right-headed, we recognize that much remains to be done. Indeed, the reader might muse that we have raised more questions than we have answered. And we would agree. For example, we have not tested branded products -- some of which are extraordinarily rich in symbolic meaning -- or services, and we have not addressed the complex issue of how object meaning (however generated) relates to affect -- and other reactions deeper in the consumer's response hierarchy. And we have not dealt with the tenuous relationship between object meaning and that which attends

Table 7
Decomposition of Inter-Object Affinial Relations Into Their Dimensions Attribute, Performance, and Other

Hat	56 P							
	6 A							
	3 O							
Sweater	8 P	48 P						
	2 A	19 A						
	0 O	1 O						
Shoe	7 P	11 P	41 P					
	1 A	4 A	16 A					
	0 O	0 O	5 O					
Pasta	1 P	0 P	0 P	62 P				
	1 A	1 A	2 A	18 A				
	0 O	0 O	0 O	2 O				
Banana	0 P	0 P	0 P	6 P	49 P			
	3 A	2 A	2 A	3 A	20 A			
	0 O	0 O	0 O	0 O	3 O			
Bread	0 P	0 P	0 P	12 P	9 P	50 P		
	0 A	1 A	1 A	5 A	1 A	24 A		
	0 O	0 O	0 O	0 O	1 O	2 O		
	Hat	Sweater	Shoe	Pasta	Banana	Bread		

NOTE: P, A, and O stand for Performance, Attribute, and Other, respectively. The distributions for individual stimuli are given in the main diagonal.

Figure 3
Breakdown of Affinal Relations into Performance, Attribute, and Other



consumption experiences (particularly those accompanied by aesthetic responses) where no physical entity can be regarded as focal. But these -- and many other critical issues -- must await more mundane developmental work.

Our current program of research is focusing on two problems. First, experiments are being conducted to explicate the effect of contextual variation on an object's meaning. We believe this issue relates to both meaning creation and meaning change. Second (for all the obvious reasons), we are examining the process through which information is transformed into meaning. If we are lucky and learn something about these two problems, we shall feel confident (or foolhardy) enough to press on to the more fascinating issues.

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The Effects of Range-Frequency Manipulations on Conjoint Importance Weight Stability

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Abstract

The effect of range-frequency manipulations on the attribute levels of a conjoint stimulus set was tested experimentally by manipulating 1) the number of levels of a given attribute and, 2) the range of values for those levels and testing 1) the relative (conjoint derived) importance of that attribute, 2) the relationship between the part-worths of that attribute, and 3) the subjects' subjective (self-explicated) importance rating for that attribute. Analysis of the results indicated that both the relative (conjoint derived) and the subjective (self-explicated) importances of the attribute were affected by the range manipulation. However, the frequency manipulation affected only the relative importance, not the subjective importance. Finally, the relationship between the part-worths of the attribute was not affected by either of the manipulations.

Introduction

Since its introduction in the early 1970s, conjoint analysis has become one of the primary techniques used by marketing researchers to ascertain consumers' reactions to both existing products and new product concepts (Cattin and Wittink 1982). Commercial and academic research projects employing some form of conjoint analysis have been quite numerous during the last ten years (Green 1984, Cattin and Wittink 1982). As conjoint analysis has become an increasingly popular research tool, reliability estimation and stimulus set design for conjoint analyses have received a corresponding increase in attention.

Bateson, Reibstein, and Boulding (1985) review a number of studies that address the issue of conjoint analysis reliability, including the reliability of conjoint analysis over time (e.g., Acito 1977, McCullough and Best 1979, Segal 1982), stimulus set (e.g., Green 1974), data collection method (e.g., Cattin and Wittink 1982), and attribute set (e.g., Johnson 1974, Malhotra 1982). The effect of various estimation techniques on the stability of results has been the focus of another research stream (e.g., Jain et al 1979, Acito and Jain 1980). However, the least amount of attention in this area has been paid to stimulus set design. Issues of reliability and estimation are of secondary concern if relatively small differences in the chosen stimulus set strongly influence the study's results.

Although some research has examined the effects of stimulus set design (Chakravarti and Lynch 1983, Wittink et al 1982), it has received relatively little attention. In addition, much of the research which has been done lacks theoretical structure, with the exception, though limited to range effects, of Chakravarti and Lynch (1983). The current study uses Parducci's (1966, 1974) range frequency theory of context effects as a framework from which to develop manipulations of the stimulus set. The effects of these manipulations on subjects' perceptions of the importance of attributes and levels of attributes are examined.

Thus, the present research investigates whether the part-worths for the levels of a given attribute and the relative importance level of that attribute remain stable as 1) the range of the levels of that attribute is

manipulated and, 2) the number of levels used to define that attribute (e.g., two versus four levels) is manipulated. However, because of the use of Parducci's framework, this study goes beyond studying effects on relative (derived) importance stability to investigate the effects of these manipulations on subjects' subjective (directly elicited) importance ratings of the attribute involved.

The section which follows is a review of Parducci's range-frequency theory and those studies which have considered manipulation of the basic stimulus set in conjoint analysis, combined with a set of hypotheses which are derived from this review. Next, two sections which describe the method and results of an experiment which tested these hypotheses are presented. Finally, a discussion of the implications of the research findings for marketing practitioners and theoreticians is presented.

Range-Frequency Context Effects in Judgment

Individuals make a number of judgments each day, ranging from judging the similarity of two competing brands in a supermarket to estimating the speed of an oncoming vehicle which has moved into one's lane to pass a slower vehicle. Extensive research conducted in the social sciences has shown that an individual's judgment does not depend solely on the attributes of the stimulus object, but also on the context within which the stimulus is presented. The nature of the effect of context on an individual's judgment will be discussed below.

Much of the early work (e.g., Helson 1964, Parducci 1966) which investigated the effects of context on judgments dealt exclusively with unidimensional stimuli. For example, a typical experimental task would be to apply naturalistic verbal categories (e.g., very light) to a sequence of weights. Research indicated, not surprisingly, that whether a weight was judged very heavy or very light depended on the context within which it was presented. For example, if a subject was asked to assign verbal categories to weights ranging from 100 to 600 grams, the 100 gram weight would be considered very light. However, when the task was to assign verbal categories to weights from 10 to 100 grams, the 100 gram weight was judged very heavy.

Parducci (1966) developed a range-frequency model to account for this phenomenon. According to his theory, there are two fundamental features of the stimulus context that influence an individual's judgment process. First, the individual uses categories to divide the psychological range. A category refers to a subrange and the number of subranges depends only on the number of categories, not on stimulus conditions. For example, a subject asked to judge weights may decide to use three categories--light, moderate, and heavy. Thus, each category corresponds to one-third of the range. According to the range principle, that subject's judgment is not affected by the frequency of items--one-third of the items are always in each category.

Second, an individual uses each category for a specific proportion of his or her judgments. This is the frequency principle. Unlike the range principle, the frequency principle assumes that an individual's

judgments are affected by the frequency of the stimuli. For example, if the subject was asked to place a series of weights into three categories, and there were a greater number of light weights than moderate and heavy weights, then the light category would contain a greater percentage of weights than the other two categories.

A linear combination of the range and frequency principles can be used to predict the category to which a stimulus will be assigned. That is,

$$J_i = (R_i + F_i) / 2 \quad (1)$$

where

J_i = judgment for i th stimulus

R_i = range value of i th stimulus

F_i = frequency value of i th stimulus

The range value of the i th stimulus is the hypothetical rating of that stimulus if there were no frequency effects and depends solely on the relationship between the stimulus and the two end points. The frequency value is the hypothetical mean rating of the i th stimulus if each of the categories had been assigned a fixed proportion of the stimulus presentations (Parducci 1974). Parducci and his colleagues found the range-frequency model to account for over 80% of the variance of the context effects associated with differences in item spacing and frequency.

Context effects are more complicated to understand when the stimuli are multidimensional (e.g., a conjoint stimuli). A study by Chakravarti and Lynch (1983b) investigated range effects within the context of conjoint analysis by extending the range of an attribute to see if that reduced the derived differences in utility between the two levels of that attribute in the control condition. They found that, while ratings of the control stimuli were affected by the range manipulations, there were no significant changes in the overall rank order of the profiles. However, Mellers (1982) found that rank order of the profiles did change as a function of context. She presented scattergrams to subjects that contained a numerical rating of faculty members and their salaries. The subjects' tasks were to determine how over-benefited or under-benefited each of the faculty members were. She found that subjects' judgments of under-benefited versus over-benefited changed systematically as a function of context.

Frequency effects have received less attention than range effects, perhaps due to the fact that "range" is both a more obvious and a more effective feature of a stimulus context. That is, perhaps range effects are easier to empirically demonstrate than frequency effects. Still, Currim, Weinberg and Wittink (1981) found that attribute importance weights from a conjoint analysis are influenced by the number of levels used to define that attribute. In a study of rank order preferences for subscription plans to a performing arts series, they found that attributes defined on three levels were judged more important than attributes defined on two levels. They presented a mathematical explanation for this finding based on work by Krishnamurthi and Wittink (1983). These findings were replicated by Wittink, Krishnamurthi, and Nutter (1982).

We argue from Parducci's theory that both range and frequency effects can be specified for conjoint stimulus sets. While the precise effects of range remain unclear, there have been such effects in all research to date. Wittink et al's (1982) findings of number of level

effects on attribute importance also suggest that frequency effects are at work in a conjoint task. Hence, we develop the following hypotheses with respect to derived attribute importance.

H1a: An increase in the overall range of the values of the levels of a given attribute will increase the relative importance of that attribute.

H1b: An increase in the number of levels used to define a given attribute will increase the relative importance weight of that attribute.

Based on Parducci's hypothesis with respect to weights, it can be hypothesized that two levels of an attribute will be valued differently depending on where they occur in the range of stimuli (Chakravarti and Lynch 1983). For example, in conjoint analysis, the levels 20 and 30 MPG for the attribute "miles per gallon" may have a lower relative importance difference when the level values range from 10 to 40 "miles per gallon" than when the level values range from 20 to 30 "miles per gallon". An opposite argument can be made for frequency effects. That is, if 20 and 30 MPG are the extreme points of a range which contains four rather than two levels, they should be further apart in relative importance. This notion, if true, has serious implications for conjoint based research. As a result, we hypothesize

H2a: An increase in the range of the level values of a given attribute will increase the relative importance weight of the extreme values of that attribute.

H2b: An increase in the number of levels used to define a given attribute will increase the relative importance weight of the extreme values of that attribute.

If Parducci's (1966) theory holds for conjoint stimuli, we are able to posit that subjects' actual perceptions of an attribute's importance are affected by both the range of level values assigned to the attribute and by the number of levels assigned to that attribute. Specifically, subjects' subjective (directly elicited) ratings of the importance of the manipulated attributes will be consistent with the derived attribute importance weights from the conjoint analysis. Thus,

H3a: Subjects' subjective importance ratings for an attribute will be higher when the range of values for that attribute are greater.

H3b: Subjects' subjective importance ratings for an attribute will be higher when that attribute has four levels than when that attribute has two levels.

Method

Design overview. To test the above hypotheses we employed a 3 cell design manipulating the levels of a single attribute of a seven attribute conjoint task. The three cells included a control cell, a frequency manipulated cell, and a range manipulated cell. The conjoint task was followed by a thirty minute distractor

task and, finally, a task in which the subjects reported the subjective importance to their purchase of an automobile of each of the attributes from the conjoint task. In the conjoint task, subjects rated (on a scale from 1 to 7) 32 profiles, each with seven attributes. Automobiles were chosen as the product class to ensure that the subjects would be reasonably interested in and knowledgeable of the product.

Subjects. The subjects were two groups: 1) 89 undergraduate students at a private Southeastern University who participated in partial fulfillment of the requirements for an introductory Psychology course, and 2) 47 undergraduate students at the same university who participated as a classroom exercise in an introductory marketing course.

Stimuli. Stimuli for the first task were 32 conjoint profiles developed from an orthogonal, main effects, fractional factorial design (Addelman, 1962, Basic Plan 7, p. 39). As noted above, automobiles were used as the product class in the conjoint task. Each profile was described by seven attributes: country of origin, miles per gallon (MPG), body style, transmission type, top speed, price, and wheel size. Body style, transmission type, and top speed were four level attributes. Price and country of origin were defined on three levels and wheel size was defined on two levels. Finally, MPG was the attribute involved in the manipulation described in the following subsection. The seven attributes are detailed in Figure A.

Figure A
Attributes and Levels

Attribute	No. of Levels	Levels
Country of Origin	3	Japan, America, Germany
Body Style	4	2 door, 4 door, hatchback, wagon
Transmission	4	Automatic, 3 speed, 4 speed, 5 speed
Top Speed	4	85 MPH, 95 MPH, 105 MPH, 115 MPH
Price	3	\$10,000, \$12,500, \$15,000
Wheel size	2	12 inch, 14 inch
Cell 1 Miles Per Gallon	4	10 MPG, 25 MPG, 40 MPG, 55 MPG
Cell 2 Miles Per Gallon	4	25 MPG, 30 MPG, 35 MPG, 40 MPG
Cell 3 Miles Per Gallon	2	25 MPG, 40 MPG

The conjoint task was presented as a paper and pencil task with instructions on the first page, followed by the profiles listed one per line with the seven attributes listed across the page followed by a space for evaluating the profile. Evaluation of the profile was on a scale from 1 to 7 with 1 indicating high preference and 7 indicating low preference.

The stimulus for the final task consisted of a single sheet of paper with instructions at the top on

which subjects rated the importance of each of the seven attributes from the conjoint task when purchasing an automobile. Rating was on a scale from 0 to 100 where the most important attribute had to be valued at 100, ties were allowed, and the least important attribute did not have to be valued at zero. This scale was chosen to ensure a ratio scaled response.

Design. The attribute MPG was varied with respect to the 1) range of the levels of the attribute and 2) number of levels used to define an attribute. Subjects in the extended range cell responded to a conjoint task in which MPG was defined on four levels (10, 25, 40, and 55). Subjects in the increased frequency cell responded to a conjoint task in which the MPG attribute was also a four level attribute, but with levels of 25, 30, 35, and 40. Finally, subjects in the control cell responded to a conjoint task in which the MPG attribute was a two level attribute with levels of 25 and 40. Other than differences in the attribute MPG, all other facets (instructions, attributes, profile order, and profile wording) of the task were held constant. Thus, comparison of cell 1 with cell 2 directly tests the range hypotheses (H1a, H2a, and H3a); comparison of cell 2 with cell 3 tests the frequency hypotheses (H1b, H2b, and H3b).

Procedure. Subjects from the psychology pool attended one of two sessions, each consisting of approximately 45 students. On entry to the auditorium, each subject of the first group was randomly given one of the three versions of the stimuli in a packet containing the stimuli for all of the experimental tasks. After receiving the packets, subjects sat anywhere in the auditorium, and worked through the packet at their own pace. On completion of the tasks, they returned the packet to the experimenters, received a debriefing sheet, and left the auditorium. Students from the second group took part during a class session. They performed the first task, carried on with class, and then completed the final task at the end of class.

Dependent Variables. The dependent variable for the conjoint tests was Green's index of relative importance (Green and Wind, 1975). This index is calculated from an Ordinary Least Squares regression of each subject's ratings of the stimulus profiles on a dummy variable design representing the various levels of the attributes involved. The index is calculated as the coefficient of the highest rated level for an attribute minus the lesser of zero or the lowest rated level for that attribute normalized such that the importances of all of the attributes sum to one. This index is based on the assumption that a large coefficient indicates attribute salience to the subject.

Green's relative importance index is used without modification for our tests of hypotheses H1a and H1b (the relative (derived) importance hypotheses). A modification, used to test H2a and H2b, involves calculating the index for the two constant levels, 25 and 40, exactly as if they are the extremes of an attribute, a modification which is intuitively appealing and identical to the original index when utilities are monotonic. The dependent variables for our tests of hypotheses H3a and H3b are the subjects' subjective (self-explicated) evaluations of the importance of the attributes involved.

Results

Table 1 presents the results of our analyses. The following two sub-sections describe these results in some detail.

Table 1
Cell Means

	Range Cell	Frequency Cell	Control Cell
MPG levels	10,25,40,55	25,30,45,40	25, 40
MPG Relative Importance	.287* ² (.014) ¹	.147** ⁴ (.013)	.107*** (.013)
MPG levels 25 and 40 Importance	.100* ³ (.013)	.114* ^{2,3} (.011)	.108* (.014)
MPG Subjective Importance	87.17* (2.87)	78.71** (2.63)	75.54** (3.19)
Manova F Statistic Significance	<u>Range</u> F(3,86)=49.99 ⁵ p < .0001	<u>Frequency</u> F(3,93)=11.03 p < .0001	

1. Standard Errors are in parentheses.
2. Means for the same variable which have the same number of asterisks are not significantly different from each other at the .05 level. All T-Tests are one-tailed since directionality is specifically hypothesized.
3. These two means differ but not significantly, with $p < .20$.
4. At first glance, these means would seem to require equality. However, some subjects prefer one of the interior levels, thus raising the importance of the attribute but not the two constant levels.
5. F-statistics are Wilks Lambda tests for MANOVA significance.

Range Effects Analyses. Tests of the range effects hypotheses involved planned comparisons between cell 1, the range manipulated cell, and cell 2, the frequency manipulated cell. The two cells were significantly different for two of the three dependent variables at the .05 level. The mean for relative importance (Hypothesis 1a) for the MPG attribute was .287 and significant at the $p < .0001$ level. The means for subjective importance (Hypothesis 3a) were 87.17 and 78.71, a difference of over 10% and significant at the $p < .025$ level. However, the means for the levels 25 and 40 (Hypothesis 2a) were .100 and .114, a difference of 14% in the right direction, but not significant. In summary, Hypotheses 1a and 3a, that both the relative and subjective importances of the attribute are affected by the range manipulation, were supported. Hypothesis 2a, that the importance between two internal levels would be affected by the range manipulation, was not supported.

Frequency Effects Analyses. Tests of the frequency effects hypotheses involved planned comparisons between cell 2, the frequency manipulated cell, and cell 3, the control cell. The two cells were significantly different for one of the three dependent variables at the $p < .05$ level. The means for relative importance (Hypothesis 1b) for the MPG attribute were .147 and .107 for cells 2 and 3 respectively, a difference of 35% and significant at the $p < .03$ level. The means for subjective importance (Hypothesis 3b) were 78.71 and 75.54, a difference of 4% in the correct direction, but not significant. Also, the means for the levels 25 and 40 (Hypothesis 2b) were .114 and .108, a difference of 5% in the correct direction but not significant. In summary, 1) Hypothesis 1b, that frequency manipulation affects relative importance weights, is supported, and 2) Hypothesis 3b, that frequency manipulation affects subjective importance weights, and Hypothesis 2b, that frequency manipulation affects the importance difference between MPG levels 25 and 40, are not supported.

Discussion

General Discussion: The results of the analyses have demonstrated that conjoint estimates of the relationship between two specific levels of an attribute appear to remain stable as 1) the number of levels used to define that attribute and 2) the range of values for

those levels are manipulated. In making this conclusion, however, it must be noted that the means for the relative importance measure for the two levels were, in both cases, in the hypothesized direction. More significantly, estimates of the importance of an attribute are affected by the number of levels and the range chosen for the attribute. In addition, our results show that a subject's perceptions of an attribute are affected by the range of values of the levels of that attribute. That is, confirmation of Hypothesis 3a suggests that subjects believe that an attribute is, in fact, more important when the range of values of the levels of that attribute increases which, in turn, suggests a perceptual basis for the phenomenon.

Implications. There are several implications of these findings for research practitioners who employ conjoint analysis. These findings re-emphasize that it is inappropriate to refer to an attribute's importance in absolute terms. That is, an attribute's importance weight is influenced by the context within which it is presented. Instead, one would refer to the importance of a difference between the two extreme levels of a given attribute in the context of a specific conjoint task. If we consider price, we can only speak of the importance of the difference between a price of \$2,000 and one of \$12,000, not of some global importance of price itself. Clearly, if a different range were employed, for example, \$4,000 to \$4,500, then price might be perceived as an unimportant attribute. These results suggest specific, practical options for conjoint stimulus design. The first of these is the need to carefully consider the range over which the levels of an attribute are spread. Green and Srinivasan (1978) argue for end points of the range slightly more extreme than those "found in nature." This research suggests a real need to correspond with the range found in nature to avoid over or under evaluation of an attribute. With respect to frequency effects on attribute importance, two options are to 1) use equal numbers of levels for each attribute or 2) use different versions of the instrument with different numbers of levels for each attribute to test the effects of frequency differences.

This study has theoretical implications since it suggests that at least the effects of range manipulations are perceptual in nature rather than artifacts of the

estimation process itself. As a result of this finding, one can argue that conjoint analyses not only capture a subject's utility for various attributes, but, in fact, can to some extent, modify or even create that utility. Nevertheless, these findings require further research.

Future Research. There are several opportunities for further research which arise out of this study. The first group of research opportunities are those which explore the characteristics of the effects. For example, one project of interest is to study changes in the effects of range or frequency manipulations given different starting points with respect to number of levels and attribute ranges. Does addition of one level to an attribute have a different effect with a starting point of four versus six levels? Another study would include systematic exploration of the effects of these manipulations on the unmanipulated attributes. That is, if a range increase also increases the importance of the manipulated attribute, is there another unmanipulated attribute which decreases in importance? This would require use of a different scale in the subjective importance task. Another study might be concerned with the effect of number of attributes on the strength of these effects. One might guess that the fewer attributes the more effective range and frequency manipulations are. A final study in this area would be to attempt to replicate the findings using a rank order task rather than a rating task.

The second group of studies of interest would deal with the nature of the effects of the manipulation. For example, how long would subjects' subjective importances stay different after the manipulation of range and/or frequency? Another interesting study would explore how the effects work, in terms of recall and recognition differences between manipulated and non-manipulated groups. In short, demonstration of the existence of these range-frequency effects and, most particularly, their perceptual basis, offers scope for several new research projects.

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On The Design And Analysis Of Correlated Conjoint Experiments Using Difference Designs

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Abstract

This paper describes and illustrates an approach that can be used to design correlated conjoint judgment and choice experiments involving numerical attributes. The approach involves the use of fractional factorial designs to create orthogonal difference vectors for numerical attributes. To implement the approach one i) develops a "base" set of absolute attribute level vectors that contain a particular correlational structure of interest, and ii) operates upon these base vectors with the designed orthogonal difference vectors to generate absolute numerical attribute levels of one or more other alternatives. The attribute profiles generated by difference designs are evaluated by respondents in paired or multiple comparison experiments. A variety of response modes and analytical techniques can be used in conjunction with the proposed designs. The paper illustrates some of the design possibilities, discusses their limitations, and describes some academic and applied advantages.

Introduction

Conjoint analysis techniques have been used routinely in commercial marketing research (Cattin and Wittinck, 1982, 1985), and have received considerable academic attention (e.g., Green and Srinivasan, 1978; Rao, 1977; Lynch, 1985). Most published studies have used various types of orthogonal fractional factorial experimental designs originally suggested by Green (1974). Orthogonal designs are useful from the standpoint of identification (i.e., various utility functions can be specified) and precision (i.e., the precision of the parameter estimates of particular specifications can be controlled a priori). However, concern has been expressed recently in both applied (e.g., Riedesel, 1985) and academic (e.g., DeSarbo, Mahajan and Steckel, 1986) papers that orthogonal arrays can fail to capture environmental correlations that exist among attributes in various product markets and/or produce unrealistic or impossible profiles.

Several studies have demonstrated that conjoint results based on uncorrelated attributes differ from those using correlated attributes (See, e.g., Hoffman, 1968; Huber and McCann, 1982; Johnson, Meyer and Ghose, 1986; Levin and Johnson, 1984, 1986). Such findings seem to have been ignored in practice, possibly because of anecdotal reports that consumers are usually ignorant of the feasibility or likelihood of treatment combinations. While possibly true for many consumer product studies, it may be less true for many industrial products. Thus, although orthogonal arrays may be satisfactory in many conjoint analysis studies, it would be useful to be able to design conjoint experiments that accommodate correlated attribute arrays, and retain desirable identification and precision properties.

The purpose of this paper, therefore, is to propose an approach to the design of correlated attribute conjoint experiments, which applies to the following types of problems: 1) all attributes are numerical (except for brand or store name), and at least one pair of attributes is correlated; 2) there is a mix of qualitative and numerical attributes, but only correlations among the numerical attributes are of interest; and 3) there is a mix of numerical and qualitative attributes, and correlations among numerical and (uncorrelated) qualitative attributes are of interest. Towards this end, the paper is organized as follows: we first define difference designs and explain the logic of their application to conjoint problems, next we describe and illustrate their construction and analysis, and finally we discuss some of their limitations, and make suggestions for additional research extensions.

Introduction To Difference Designs

Difference designs can be thought of as a series of possibilities between totally orthogonal and totally correlated designs. The logic and construction of orthogonal designs for conjoint analysis problems is well-understood. Similarly, combining correlated attributes into orthogonal designs as "composite" attributes has been proposed and demonstrated (e.g., Green, 1974; Green and Srinivasan, 1978; DeSarbo, Mahajan and Steckel, 1986). However, we are unaware of efficient designs with intermediate correlation levels.

The difference designs that we propose allow one to have more control over the degree of correlation in the absolute values of numerical attributes than is now possible with other design methods. Furthermore, difference designs produce a large number of different levels of numerical attributes, rather than the two or three levels commonly used in applied conjoint studies. In particular, the proposed design approach permits one to control the identification and precision properties of the attribute arrays based on the following model of the response process:

$$U[d(ij)] = U(i) - U(j), \quad (1)$$

where,

$U[d(ij)]$ is the utility of the difference in the utilities of alternatives i and j ($i=1, \dots, I$; $j=1, \dots, J$).

$U(i)$, $U(j)$ are, respectively, the separate utilities of alternatives i and j .

$U(i)$ and $U(j)$ are defined as follows:

$$\begin{aligned} U(i) &= f[\underset{\sim}{X}(ik)] \\ U(j) &= f[\underset{\sim}{X}(jk)], \end{aligned} \quad (2)$$

where

$\underset{\sim}{X}(i)$, $\underset{\sim}{X}(j)$ are vectors of absolute levels of the K -th ($k=1, \dots, K$) attributes for the i th and j th alternatives, respectively.

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Thus,

$$U[d(ij)] = g\{f[\tilde{X}(i)] - f[\tilde{X}(j)]\}. \quad (3)$$

If the functional specifications g and f can be represented as linear-in-the-parameters-and-variables forms, equation (3) can be expressed as follows:

$$U[d(ij)] = b'[\tilde{X}(i) - \tilde{X}(j)], \quad (4)$$

where

b' is a K dimensional vector of parameters associated with the K attribute difference vectors to be estimated from responses to the experimental difference treatments.

Decision models based on differences in the attributes of alternatives are not new. For example, the Thurstone (1927) paired comparisons model allows one to estimate the overall utility values of a set of alternatives as differences from an arbitrarily chosen origin stimulus. Difference models also have been proposed for preference (e.g., Scheffe, 1952; Anderson, 1981, pp. 29-31) and personality impression formation judgments (e.g., Schmidt and Levin, 1972). What is new in our approach is the way in which one uses orthogonal, fractional factorial design techniques to develop correlated conjoint designs for both judgment and choice problems.

The Logic Of Difference Designs

To construct difference designs, one uses orthogonal arrays to represent differences among quantitative variables. The orthogonal difference vectors correspond to and operate upon an array of absolute attribute levels which one designs so as to incorporate interattribute correlations of experimental interest. This designed array of correlated attribute levels consists of profiles that describe a "base" set of alternatives. The difference-in-utility model of Equation (4) can be estimated efficiently if the difference vectors are orthogonal; hence, one is free to choose the absolute numerical attribute levels for one alternative -- the "base" alternative -- so long as the *differences* between the absolute levels of the attributes of the arbitrarily chosen alternative and the absolute levels of the attributes of all other alternatives are orthogonal. In general, the absolute attribute levels and their correlational structure should span a range of possibilities representative of the product market of interest.

A difference design is therefore an orthogonal array of difference vectors which is applied to the arbitrarily correlated vectors of absolute attribute levels of a "base" alternative to create one or more additional alternatives. Respondents must compare alternatives in such a way that one can estimate the differences between the attribute levels of the "base" alternative and one or more other alternatives (profiles of absolute attribute levels). Thus, paired or multiple comparison tasks are obvious ways to implement difference designs.

Difference designs for two alternatives (paired comparisons) can be used with a variety of commonly used response modes that satisfy equation (4), such as graded pair comparisons (ratings), resource allocations and discrete choices, or the preference intensity measures

suggested by Hauser and Shugan, 1980). Graded paired comparison tasks require subjects to estimate the degree of dominance (e.g., "preference") of one alternative over a second using a rating scale. In allocation tasks, subjects allocate some fixed set of resources to each alternative in a pair such that the allocations represent how much one dominates the other (e.g., in "attractiveness"). In discrete paired choice tasks subjects choose the alternative that dominates on a particular response dimension (e.g., "purchase likelihood"). In the multiple comparison case, we concentrate on resource allocation or discrete choice responses because they satisfy the comparisons implied by equation (4).

Construction Of Difference Designs

The construction of difference designs can be illustrated by the following four cases that cover the possible applications.

Case I: Multiple Numerical Attribute Difference Vectors, Paired Alternatives

Let us consider a problem in which a consumer has comparative ratings information available on several restaurants in a particular city on the attributes of food quality, service and price. Table 1 contains eight hypothetical food quality, service and price ratings on a 1-10 scale. We demonstrate the use of a difference design in Table 1 by using a 2x2x2 factorial design to vary levels of "differences" in the ratings of the three attributes; the levels of the attribute differences are -1 or +1 in rating units. One can use any numerical difference levels, however, one should use difference levels that generate absolute attribute levels (in this example, "ratings" units) of the second alternative that will lie within the range of the absolute levels in the product market of interest (In this case between the values 1 and 10).

The difference design levels are added to the attribute ratings for each of the eight hypothetical restaurant profiles to produce eight additional hypothetical restaurant profiles as shown in Table 1. Correlations among the ratings levels of the "base" set of eight restaurants are also shown in Table 1.

Table 1 also contains the "B" restaurants that are created by applying the difference design to the ratings levels of the "A" restaurants. That is, the ratings levels of the eight "B" restaurants in Table 1 are produced by adding the levels of the difference design to the numerical ratings levels in Table 1. The experiment represented by the eight pairs of restaurant ratings in Table 1 is implemented by asking respondents to compare each pair on some response dimension of interest, such as "preference", "likelihood of choice", etc. For example, one might ask respondents to allocate 100 points to the restaurants in each pair in such a way as to reflect the relative degree of preference for one over the other.

One can choose any arbitrary correlational structure for the absolute attribute levels of a base alternative. In fact, one can create a wide range of correlations among the attributes of a second alternative by systematically interchanging the rows of the base alternative to approximate a desired correlational structure. Correlations among the attributes of a base and second alternative are therefore irrelevant because difference designs are orthogonal.

TABLE 1
A 3-ATTRIBUTE PAIRED DIFFERENCE DESIGN BASED ON A FRACTION OF THE 2 x 2 x 2 FACTORIAL DESIGN

<u>STEP 1</u> Rest. "A" (Base) Attribute Ratings			<u>STEP 2</u> Difference Design Attribute Differences			<u>STEP 1 + STEP 2</u> Restaurant "B" Ratings		
Food	Service	Price	Food	Service	Price	Food	Service	Price
8	4	2	-1	+1	-1	7	5	1
3	5	9	-1	+1	+1	2	6	10
5	4	6	-1	-1	-1	4	3	5
6	8	3	-1	-1	+1	5	7	4
9	2	7	+1	+1	-1	10	3	6
7	3	5	+1	+1	+1	8	4	6
2	9	4	+1	-1	-1	3	8	3
4	6	8	+1	+1	+1	5	7	9

CORRELATIONS AMONG RATINGS VECTORS

	<u>RESTAURANT "A"</u>			<u>RESTAURANT "B"</u>		
	<u>FOOD</u>	<u>SERVICE</u>	<u>PRICE</u>	<u>FOOD</u>	<u>SERVICE</u>	<u>PRICE</u>
<u>FOOD</u>	1.00	0.71	-0.31	1.00	0.60	0.23
<u>SERVICE</u>		1.00	-0.28		1.00	0.01
<u>PRICE</u>			1.00			1.00

TABLE 2: A 3-ATTRIBUTE MULTIPLE COMPARISON EXPERIMENT BASED ON A FRACTION OF THE 2 X 2 X 2 X 2 X 2 X 2 FACTORIAL

<u>STEP 1</u> Rest. "A" (Base) Attribute Ratings			<u>STEP 2</u> Difference Design Attribute Differences			<u>STEP 1 + STEP 2</u> Restaurant "B" Ratings		
Food	Service	Price	Food	Service	Price	Food	Service	Price
8	4	2	+1	-1	+1	9	3	3
3	5	9	+1	+1	-1	4	6	9
5	4	6	-1	-1	-1	4	3	5
6	8	3	-1	+1	+1	5	9	4
9	2	7	-1	+1	-1	8	3	6
7	3	5	-1	-1	+1	6	2	6
2	9	4	+1	+1	+1	3	1	5
4	6	8	+1	-1	-1	5	5	7

CORRELATIONS AMONG RATINGS VECTORS

	<u>RESTAURANT "A"</u>			<u>RESTAURANT "B"</u>			<u>RESTAURANT "C"</u>		
	<u>FOOD</u>	<u>SERVICE</u>	<u>PRICE</u>	<u>FOOD</u>	<u>SERVICE</u>	<u>PRICE</u>	<u>FOOD</u>	<u>SERVICE</u>	<u>PRICE</u>
<u>FOOD</u>	1.00	0.71	-0.31	1.00	0.60	0.23	1.00	0.61	0.39
<u>SERVICE</u>		1.00	-0.28		1.00	0.01		1.00	0.04
<u>PRICE</u>			1.00			1.00			1.00

Case II: Several Attribute Difference Vectors, Multiple Alternatives

It is a straightforward matter to extend the design in Table 1 to a multiple comparison experiment involving more than two brands. As before, a "base" set of treatments and a set of orthogonal difference vectors is developed. Continuing the example of Table 1, we create a multiple comparison experiment for sets of three different restaurants, "A", "B" and "C": The same difference design in Table 1 is used for the "B" restaurants, and three additional orthogonal difference vectors (shown in Table 3) are used to create the "C" restaurants. That is, the difference design in Table 2 contains six orthogonal difference vectors -- the three already used in Table 1, plus an additional three drawn from the 2⁶ factorial. Combining the ratings for restaurants "A" and "B" in Table 1 with the ratings for restaurant "C" in Table 2 produces eight multiple

comparisons (triples). The ratings for "C" are produced in the same manner as the ratings for "B" in Table 1: the difference vectors in Table 2 are added to the corresponding absolute attribute level vectors for restaurant "A" (the "base"). Correlations among the derived absolute attribute rating vectors also are shown in Table 2.

One can implement the multiple comparison experiment represented by the attribute ratings levels in Tables 1 and 2 as a discrete choice or resource allocation task. For example, subjects might be asked to indicate which one of the three restaurants in each of the 8 comparison sets (choice sets) would be the one they would be most likely to purchase if they had to choose from the three brands in that set. This design can be extended to additional alternatives by using a larger design to create their absolute attribute levels (e.g., a 16 treatment fraction of a 2¹⁵ would allow one to create up

to six different restaurants per comparison set.). One can also use one or more constant alternatives in each set, such as "I want to delay purchase" and/or "... not purchase". The sets of alternatives (in this case, "restaurants") also can be branded; i.e., instead of "A", the eight restaurant profiles under "A" could be branded as "French", the eight "B" as "Chinese", etc., or alternatively, "A" might be MacDonaldis, "B" might be "Burger King", etc. That is, the attributes are "nested" under the brand or store names.

Case III: A Single Numerical Attribute Correlated With Several Qualitative Attributes, Paired Comparisons

An example of the third case might be paired difference designs for pricing bundles of options added to a base model, which is a common strategic marketing problem in many product classes. Commonly in a bundling situation, the more options bundled on a base alternative, the higher the price. As well, higher prices often are associated with more valued features or options. Table 3 provides an example of a difference design in which price is positively correlated with the number and type of bundled automobile options such as a) air conditioning, b) AM/FM Dolby Stereo, c) sunroof d) turbo charging, and e) mag wheels. For the sake of example, assume that the prices of each feature are \$1,000; \$500; \$250; \$2,000; and \$750, respectively. Table 3 contains orthogonal feature vectors for a base brand (Mercury Cougar) and a correlated price vector. To the price vector is added a price difference vector, which is orthogonal to the presence/absence of the features. Thus, the design in Table 3 is a six factor, orthogonal main effects plan for the features and the price differences.

A second alternative (Ford T-Bird) is generated from the base attribute treatments by i) constructing a "foldover" of the orthogonal feature design for Cougar to produce the T-Bird feature combinations, and ii) adding the difference vector levels to the Cougar price levels in Table 3 to produce the T-Bird price levels. A foldover design can be constructed for "yes/no" attributes (like features) by replacing "yes" levels in the original main effects design with "no" levels, creating a second main effects plan. The profiles nested under Cougar and T-Bird that are produced by pairing each treatment in the Cougar main effects plan with its foldover are shown in Table 3. Although the prices are perfect linear combinations of the features, differences in prices are orthogonal to features. Thus, it is possible to estimate the effects of features and differences in price from this design.

Case IV: Several Numerical Attributes Correlated With Each Other And With Orthogonal Qualitative Attributes, Paired Comparisons

The last case can be generalized to paired difference designs in which there are several correlated numerical attributes and several orthogonal qualitative attributes. For example, ratings vectors such as those in Tables 1 and 2, or actual levels of attributes such as MPG or warranty might be combined with qualitative features like those in Table 3 to create ratings levels, or MPG and warranty levels for a second or comparison alternative. The salient aspect of this case is that the qualitative attribute vectors must be orthogonal to one another; numerical attributes can be intercorrelated and/or correlated with qualitative attributes.

The preceding four cases permit generalizations to be made about the construction of difference designs. Table 4 indicates that multiple comparison designs can be constructed only if all attributes are numerical. However, paired comparison designs exist for all cases. Having discussed the relevant domain of applications and some limitations, we next discuss the analysis of response data obtained from these designs.

Analysis Of Response Data Otained From Difference/Contrast Designs

Analysis of Paired Comparisons Data

The previous section discussed response modes for paired comparison experiments. Graded paired comparison ratings can be analyzed by several methods commonly applied to conjoint ratings data: e.g., O.L.S. regression, constrained regression, and LINMAP (See Green and Srinivasan, 1978, for a review of these and other analytical approaches). Other possibilities include Tobit regression (e.g., Malhotra, 1986) or ordered probit and logit procedures (e.g., Madalla, 1983). Estimation methods used with ranking data (e.g., MONANOVA) are less commonly applied to comparison data. "Partworths" or partial utilities estimated from comparison tasks correspond to the difference or contrast levels, not to attribute levels seen by respondents. Thus, depending upon the choice of coding scheme, results are relative to a "base" or standard stimulus. Thus, one makes inferences about degrees of preference or utility associated with particular difference or contrast levels rather than the absolute levels. However, one can forecast to absolute levels.

**TABLE 3
A SINGLE ATTRIBUTE DIFFERENCE DESIGN FOR PRICING OPTION BUNDLES**

Mercury Cougar (Base Brand)						Price Diff	Ford T-Bird (Designed Brand)					
Air	Ster	Roof	Tur	Mags	Price		Air	Ster	Roof	Tur	Mags	Price
No	YES	NO	YES	YES	14250	+1000	YES	NO	YES	NO	NO	15250
NO	YES	NO	NO	NO	11500	-1000	YES	NO	YES	YES	YES	10500
NO	NO	YES	YES	YES	14000	-1000	YES	YES	NO	NO	NO	13000
NO	NO	YES	NO	NO	11250	+1000	YES	YES	NO	YES	YES	12250
YES	YES	YES	YES	NO	14750	-1000	NO	NO	NO	NO	YES	13750
YES	YES	YES	NO	YES	13500	+1000	NO	NO	NO	YES	NO	14500
YES	NO	NO	YES	NO	14000	+1000	NO	YES	YES	NO	YES	15000
YES	NO	NO	NO	YES	12750	-1000	NO	YES	YES	YES	NO	11750

TABLE 4
GUIDE TO THE CONSTRUCTION OF DIFFERENCE/CONTRAST DESIGNS

TYPES OF ATTRIBUTES OF INTEREST	PAIRWISE COMPARISON DESIGNS	MULTIPLE COM-PARISON DESIGNS
ALL ATTRIBUTES NUMERICAL	ORTHOGONAL DIFFERENCES	ORTHOLOG. DIFFERENCES
MIXTURE OF QUAL- ITATIVE AND NUMER- ICAL ATTRIBUTES	ORTHOGONAL DIFFERENCES IF ATTRIBUTES ARE NUM- ERICAL & ORTHOGONAL CONTRASTS IF QUALITATIVE	NO ORTHOGONAL DESIGN EXISTS. CONSIDER DESIGNS IN LOUVIERE AND WOODWORTH, 1983.
ALL ATTRIBUTES QUALITATIVE	ORTHOGONAL CONTRASTS	NO ORTHOGONAL DESIGN EXISTS. CONSIDER DESIGNS IN LOUVIERE AND WOODWORTH, 1983.

Analysis of Multiple Comparisons Data

We will only discuss discrete choice or resource allocation response modes for multiple comparisons because these are consistent with equation (4). Ranking data also can be used to develop discrete choice models by means of an explosion technique first applied in marketing to conjoint data by Chapman and Staelin (1982). In the case of multiple comparison tasks, subjects must rank all alternatives in each comparison set (choice set), which considerably complicates the task and adds to its length. Nonetheless, one can also use this approach.

Multiple comparison models include the now well-known multinomial logit (MNL) model (Hensher and Johnson, 1981; Louviere and Woodworth, 1983; Corstens and Gautchi, 1983), as well as other less frequently applied models, such as multinomial probit (Daganzo, 1979), and other forms such as hierarchical, sequential and tree models (See, e.g., Tversky, 1973; Tversky and Sattah, 1979; Lehmann and Moore, 1985). Difference designs for both paired and multiple comparison tasks are consistent with MNL models; and because many now are familiar with MNL models, we use them to illustrate the analysis of responses to multiple comparison difference designs.

One can rewrite the MNL model for J ($j=1, 2, \dots, J$) brands:

$$p(a|A) = \frac{\exp[U(a)]}{\exp[U(a)] + \sum_{j \in A} \exp[U(j)]} \quad (5)$$

where

$p(a|A)$ is the probability of choosing alternative a from a choice or comparison set in which a is a member.

$U(a)$, $U(j)$ are unknown utilities of alternatives a and j that are to be estimated from choice or allocation data.

\exp is the exponential operator. $\forall j \in A$ means that the operation is defined "for all the j alternatives contained in choice or comparison set A ".

Equation (5) can be rewritten to show that choice probabilities are determined by differences in the utilities of the alternatives in each choice or comparison set:

$$\ln[p(a|A)] = \ln[p(\text{base}|A)] + [U(a) - U(\text{base})] \quad (6)$$

where

$\ln(x)$ is the natural logarithm of the choice probability of alternative x .

base refers to the choice alternative that will serve as the origin or "base" of the utility scale.

It is identical to the "base" brand discussed in the design construction section.

Otherwise, all terms are as previously defined.

Equation (6) indicates that MNL models can be expressed in terms of two components: 1) the choice probabilities of the base alternative, and 2) differences in the utilities of each choice alternative and a base alternative in some particular choice set A . This formulation allows us to outline the domain of application of difference designs (assuming that empirical choice probabilities can be well-approximated by a MNL model). In particular, equation (6) implies that the only specification of the utility function that is consistent with allocations or choices made in response to a difference design is the following:

$$\ln[p(a|A)] = \ln[p(\text{base}|A)] + [c(a) - c(\text{base})] + b(k)[(X(a,k) - X(\text{base},k))] \quad (7)$$

where

$c(a)$, $c(\text{base})$ are "alternative (or brand)-specific" parameters that define the brand weights of brand a and the base brand. If all alternatives are non-branded concepts, all attributes should have identical b parameters.

$b(k)$ is an element of the vector of parameters to be estimated from the choice or allocation data. There are K ($k=1, 2, \dots, K$) parameters associated with each attribute difference vector. The K parameters are called "generic" parameters because they are constant across all alternatives. Attribute parameters which vary across alternatives (i.e., are "nested" under alternatives) are called alternative-specific.

$X(a,k)$, $X(\text{base},k)$ are absolute levels of elements of attribute vectors of alternative a and the base alternative. Their elements correspond to the K attributes whose differences are varied in the difference design.

In equation (7) the parameters of each attribute are the same for all alternatives, although each alternative can have a different "brand weight", which represents a contrast with the base brand. Difference designs permit one to relax the assumption that attribute parameters are the same across brands by specifying "alternative-specific" parameters for one or more of the brands of interest. However, this relaxation may create analytic problems, as we indicate later. Difference designs also permit mixed model specifications in which some vectors of attribute differences have common or generic parameters, while other parameters defined on absolute attribute level vectors may be alternative-specific.

Only attribute differences are orthogonal in difference designs; thus, the absolute levels of attribute values can be highly correlated. This can be a problem if one estimates alternative-specific effects for two or more attributes common to all brands because correlations among absolute attribute levels within brands are preserved in alternative-specific effects specifications. That is, if the absolute levels of two or more numerical attributes nested under brands are correlated, collinearity might pose problems for estimating their alternative-specific effects.

If only a single attribute is correlated between brands (e.g., the price of each brand), collinearity is not a problem because the vectors of absolute levels are uniquely nested under each brand. For example, Table 5 illustrates a pricing experiment in which there are 11 brands (pizza outlets), one of which is the base alternative (Domino's). The experimental design consists of a set of orthogonal price difference vectors that define the prices of other brands relative to the price of a base brand. The absolute price levels were deliberately designed to span the range of prices that existed in the market at the time of the study. In the example in Table 5 collinearity is not a problem because only a single numerical attribute (price) is involved.

The experiment described in Table 5 was administered to 237 undergraduate business students in a large Midwestern U.S. university who were regular or occasional consumers of delivered pizza. Each

comparison set listed the price of a basic cheese pizza as well as the cost of one, two or three additional ingredients (expressed as a linear combination of the price of a cheese pizza) for each restaurant in a particular choice set. Subjects were asked to assume that because of the hour, renovations, bankruptcy or other reasons, the only restaurants from which they could order were those listed in each set. Subjects made discrete choices from all 88 choice sets; the order of appearance of the sets was randomized across subjects. The data of analytical interest are the aggregated choice frequencies of the 237 subjects in the 88 choice sets.

MNL models were fit to the data in Table 5 using iteratively reweighted least squares techniques to obtain the maximum likelihood estimates (Woodworth and Louviere, 1984). The analytical results (Table 6) can be interpreted as follows: a positive brand-weight parameter indicates that a restaurant was preferred (chosen more often) than the base restaurant (Domino's), while a negative brand weight indicates the reverse. An alternative-specific model was also estimated and compared statistically with the model in Table 6 that assumes a common or generic price parameter for all brands. The statistical results indicated that including alternative-specific price effects did not significantly improve the fit of a generic price parameter model. The generic price parameter in Table 6 can be interpreted to mean that as the price differential between Domino's and a restaurant increases by \$1.00, the utility of that restaurant relative to Domino's decreases by 0.80 units. Thus, difference designs for multiple comparison problems involving numerical attributes like price can be developed and analyzed in a straightforward manner.

The final section discusses the design cases described in the paper, indicates some of their limitations, mentions some additional analytical considerations, and describes several advantages of potential interest to academic researchers, concluding on a cautionary note.

Discussion And Conclusions

This paper proposed a new approach to the construction of conjoint designs that permits one to manipulate the degree of correlation among the absolute levels of numerical attributes. For example, in concept testing problems using unbranded concepts, researchers

TABLE 5
ONE OF 11 SETS OF CHOICE SETS FROM THE DIFFERENCE DESIGN USED TO CONSTRUCT THE DELIVERED PIZZA PRICING EXPERIMENT

STEP 1 PRICE OF DOMINO'S (BASE)	STEP 2 DIFFERENCE DESIGN FOR PRICES OF OTHER PIZZAS						STEP 1 + STEP 2 SUBJECTS SEE THESE PIZZA PRICES FOR EACH RESTAURANT LISTED BELOW					
	A	B	C	D	E	F	A	B	C	D	E	F
10.25	-2	+3	+2	+2	-1	+3	8.25	13.25	12.25	12.25	9.25	13.25
9.25	-2	-1	+2	+2	+3	-1	7.25	8.25	11.25	11.25	12.25	8.25
11.25	+2	+3	+2	-2	+3	+3	13.25	14.25	13.25	9.25	14.25	14.25
10.50	+2	-1	+2	-2	-1	-1	12.50	9.50	12.50	8.50	9.50	9.50
9.75	-2	+3	-2	-2	+3	-1	7.75	12.75	7.75	7.75	12.75	8.75
10.75	-2	-1	-2	-2	-1	+3	8.75	9.75	8.75	8.75	9.75	13.75
9.50	+2	+3	-2	+2	-1	-1	11.50	12.50	7.50	11.50	8.50	8.50
11.50	+2	-1	-2	+2	+3	+3	13.50	10.50	9.50	13.50	14.50	14.50

(NOTE: BRANDS G-J WERE NOT PRESENT IN THIS SET OF CHOICE SETS)

TABLE 6
STATISTICAL RESULTS FOR THE PIZZA PRICING
EXPERIMENT

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	R ²
MODEL	100	12494.21	124.94	68.31	0.94
ERROR	467	854.07	1.83		
TOTAL	568	13348.28			

VARIABLE	EST.	STD. ERR.	T-VALUE	P(T Ho)
REST A	-0.44	0.05	-8.12	0.0001
REST B	0.39	0.05	8.38	0.0001
REST C	-0.39	0.05	-7.45	0.0001
REST D	0.31	0.05	5.95	0.0001
REST E	1.06	0.05	22.24	0.0001
REST F	-0.29	0.05	-5.59	0.0001
REST G	0.62	0.05	12.73	0.0001
REST H	-0.17	0.06	-2.84	0.0047
REST I	0.91	0.05	19.26	0.0001
REST J	0.41	0.05	7.87	0.0001
GENERIC PRICE	-0.80	0.01	-72.10	0.0001

often wish to correlate attributes within but not necessarily between alternatives. On the other hand, in pricing experiments, researchers often want to correlate the price vectors of various brands across one another, reflecting an existing market structure. The method of design construction described in this paper not only allows one to control correlations among levels of numerical attributes within and between brands, it also enables one to obtain orthogonal estimates of parameters of difference-in-utility models.

The approach proposed in this paper views the design problem in terms of constructing orthogonal difference matrices. A "base" alternative is used to set the range, variability and correlation of the attributes. The base alternative and the associated difference design completely define the experimental treatments. Conjoint experiments derived from difference designs require subjects to make comparison judgments, resource allocations or discrete choices; such response data are compatible with difference-in-utility models.

One should be cautious about trying to develop individual-level conjoint models from discrete choice data because such models usually require many more treatments than are used in most applied conjoint problems to achieve asymptotic levels of efficiency comparable to regression models. Chapman (1984) and McFadden (1974) provide tables of efficiencies for logit models with various numbers of parameters and observations. One can use these tables to determine the size of experiment needed to produce reliable and efficient individual-level estimates. Because one can obtain much more choice data from individuals in academic research, one is less limited in such situations. However, one should be aware of the analytical limitations of discrete choice models whether data are experimental or observational. Of course, one can group subjects with similar choice patterns by means of discrete clustering techniques (e.g., Wilkinson, 1986, Chapter 16). Each cluster of subjects can be separately analyzed using their aggregate choice frequency counts as the dependent variable in a logit or probit regression

analysis (See Louviere and Woodworth, 1983, for a similar suggestion).

One can specify and estimate interaction effects from cross-products of difference vectors, as in current conjoint models. However, orthogonal polynomials cannot be used to describe non-linearities in such response surfaces, as suggested by Louviere and Woodworth (1983). Rather, if there are non-linear effects, other transformations are appropriate: e.g., a logarithmic transformation applies to cases in which the rate of change in the response depends on the absolute value of the numerical attribute. Other transformations are discussed in Ben-Akiva and Lerman (1985, 174-182).

Difference designs have several advantages over conventional orthogonal arrays commonly used in conjoint applications: 1) In the case of numerical attributes, subjects see a large number of absolute levels because the absolute levels of the base alternative and the orthogonal differences produce a variety of absolute levels. This may lessen demand characteristics that result when subjects see only a few absolute levels (often only two!), and make the task more reflective of levels in real markets. 2) Difference designs can be used to avoid dominance problems associated with using orthogonal arrays to develop choice sets for non-branded attribute profiles. For example, research into weight shifting in utility functions as a function of the composition of choice sets and the range of the attribute levels requires caution to insure that designs are statistically efficient and there are no dominant alternatives in any choice sets (See, e.g., Meyer and Eagle, 1982; Eagle, 1984). 3) Difference designs can be used to study the performance of MNL or other choice models under different attribute correlational structures within and/or between brands. For example, Johnson, Meyer and Ghose (1986) report that MNL models perform poorly when attributes are negatively correlated, as they often are in real markets (See, e.g., Curry, 1985). However, collinearity in their absolute attribute vectors may have affected the parameter estimates of their MNL models. Orthogonal difference designs therefore can be used to test the generality of such conclusions, as well as to explore the properties of various choice models under controlled conditions.

We would like to end on a cautionary note: the properties of difference designs may vary with different configurations of base alternatives. We have not examined such effects, but we have examined a wide range of different experiments with different base configurations. Our empirical results suggest that variance in base configurations is probably of minor concern because orthogonality of the design matrix seems to be the determining factor in the statistical properties of the resulting design. Nonetheless, the question of possible effects on results due to different configurations of base alternatives remains open, and we invite others to assist in illuminating this issue.

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A New Multidimensional Scaling Methodology for the Representation of Inter-Product Substitutability

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But Coke's goal is to steal business from Diet Pepsi and not hurt Diet Coke in the process of rebuilding Tab's sales.

Wall Street Journal

ABSTRACT

Batsell and Polking (1985) have recently proposed a new class of market share models. The models demonstrate that it is possible to decompose the ratios of market shares for any pair of products in any choice set into a natural hierarchy of inter-product competitive effects. One level in this hierarchy is a measure of the degree to which a product, say k , cannibalizes the market share of product i relative to product j . This paper proposes a new multidimensional scaling (MDS) methodology which uses the revealed substitutability between products to derive a representation of the competing products as points in a space of prescribed dimensionality. An interesting feature of the methodology is that it allows for the derivation of spaces which are either symmetric or asymmetric. In the symmetric space, each product is represented as a single set of coordinates. In the asymmetric space, each product is represented as 2 sets of coordinates: one set of coordinates for each product as a "drawer" of market share, and a second set of coordinates for each product as a "drawee" from which the "drawers" take share. The methodology and corresponding algorithm are discussed in detail and two applications are used to demonstrate the procedure.

INTRODUCTION

In a recent paper, Batsell and Polking (1985) have proposed a new class of market share models. This class of models is based on a theorem that demonstrates that the natural log of the ratio of the market shares for any two products in any choice set can be decomposed into a linear combination of a set of scalars, called alphas. These alphas are characterized in terms of a natural hierarchy and reflect the competitive effects products have on each other. Of particular interest here are the third order alphas, α_{ij}^k , which reflect the degree to which product k pulls from product i 's market share as opposed to product j 's market share. In a sense, the third-order alphas scale the relative substitutability of product k for i versus j . Although these third-order alphas provide useful managerial insight into which products compete with which other products, there are a very large number of them. For N products there are $\binom{N}{2} \cdot (N-2)$ third order alphas. Thus, the competitive information contained in these alphas, although managerially useful, is not efficiently portrayed in the form of tables.

In this paper, we propose a new multidimensional scaling (MDS) methodology for representing the information contained in the third-order alphas. A metric unfolding MDS model is used to represent a set of competing products in a space of prescribed

dimensionality. The relative distances between the products is inversely proportional to their revealed substitutability. An important feature of the model is that it allows for the portrayal of products in derived spaces which are either symmetric or asymmetric. That is, each product can be represented by either one set of coordinates as in traditional MDS, or by two sets of coordinates - one set as "drawers" of market share and another set as "drawees" from whom market share is stolen. A rationale for this feature is presented later in the body of the paper.

The remainder of this paper is divided into 3 sections. First, we briefly review the models proposed by Batsell and Polking (1985). Second, the MDS model and its associated algorithm are discussed in detail. Finally, the two applications presented in Batsell and Polking (1985) are used as examples of the new MDS methodology.

REVIEW OF THE BATSELL-POLKING MODELS

Let $T = [1, 2, \dots, N]$ be a set of alternative products. For each subset $A \subset T$, let $P_A(i)$ denote the probability that alternative i will be chosen when the set A is the set of available alternatives and where $P_A(i) \neq 0$ for all $i \in A$ and for all $A \subset T$.

For each non-empty subset $A \subset T$ and for $i, j \in A$, define

$$\beta_{ij}^A = \ln \left(\frac{P_A(i)}{P_A(j)} \right), \quad (1)$$

where:

$$\beta_{ii}^A = 0 \quad \forall i \quad (2)$$

$$\beta_{ij}^A + \beta_{ji}^A = 0 \quad \forall i, j \quad (3)$$

$$\beta_{ij}^A + \beta_{jk}^A + \beta_{ki}^A = 0 \quad \forall i, j, k. \quad (4)$$

Batsell and Polking (1985) prove that there exist unique numbers, α_{ij}^I , defined for $i, j \in T$, $I \subset T$ with $I \cap \{i, j\} = \emptyset$, such that for every A ,

$$\beta_{ij}^A = \sum_{I \subset A} \alpha_{ij}^I \quad (5)$$

where, for convenience,

$$\alpha_{ii}^I = 0,$$

and

$$\alpha_{ij}^I = 0 \text{ if } I \cap \{i, j\} \neq \emptyset, \text{ for all } I, i.$$

If $A = \{i, j\}$ we have $\beta_{ij}^A = \alpha_{ij}^{\emptyset}$. In the special case $A = \{i, j, k\}$, (5) becomes

$$\beta_{ij}^{ijk} = \alpha_{ij}^{\phi} + \alpha_{ij}^k$$

Thus, α_{ij}^{ϕ} is the natural logarithm of the ratio of i's share to j's share, and α_{ij}^k measures the effect of the presence of alternative k on the natural logarithm of that ratio. In other words, α_{ij}^k is the measure of the effect of the presence of alternative k on the competition between alternatives i and j.

If $A = \{i,j,k,l\}$, (5) becomes

$$\beta_{ij}^{ijkl} = \alpha_{ij}^{\phi} + \alpha_{ij}^k + \alpha_{ij}^l + \alpha_{ij}^{kl}$$

Thus, α_{ij}^{kl} is the measure of the effect of the pair k and l on the competition between i and j with the effect of the individual products k and l already accounted for by α_{ij}^k and α_{ij}^l . In effect, α_{ij}^{kl} measures an interaction of the quadruple $\{i,j,k,l\}$. The authors call α_{ij}^{kl} a fourth order effect.

In general, α_{ij}^I measures the effect of the products in the set I on the competition between i and j with the simpler effects of all proper subsets $J \subset I$ already accounted for in (5) by the factors α_{ij}^J . Batsell and Polking (1985) show how OLS can be utilized to estimate the α_{ij}^I 's for a specified nth order model.

If $n = \#(I \cup \{i,j\})$, they call α_{ij}^I an nth order effect. The nth order model is defined as (5) with

$\alpha_{ij}^I = 0$ if $\#(I \cup \{i,j\}) > n$. Of interest here are the third-order alphas: α_{ij}^k . For example, when product k is added to the set $\{i,j\}$:

- 1) if $\alpha_{ij}^k < 0$, k pulls from i's share proportionally more than it pulls from j's share;
- 2) if $\alpha_{ij}^k = 0$, k pulls from both i's share and j's share in the same proportion; and,
- 3) if $\alpha_{ij}^k > 0$, k pulls from j's share proportionally more than it pulls from i's share.

RESEARCH OBJECTIVES

In the two applications presented in Batsell and Polking (1985), third order models were found to fit the data significantly better than the corresponding second order models. Table 1 presents the individual parameter estimates from the third order model fitted using five stimuli (snack items). (In this study, an individual subject made repeated choices from all subsets of two or more of five snack items.)

In examining the scaled third order effects, Batsell and Polking (1985) noted that Yodels pulls from Twinkies market share more than it did from that of either Milky Way ($\alpha_{24}^1 = -.451$) or Three Musketeers ($\alpha_{25}^1 = -.554$). Yodels pulls from Devil Dogs more than from either Milky Way ($\alpha_{34}^1 = -.345$) or Three Musketeers ($\alpha_{35}^1 = -.449$).

Table 1
PARAMETER ESTIMATES FROM THE 3RD ORDER MODEL: INDIVIDUAL-LEVEL, SNACK DATA

PARAMETER	SCALED SECOND ORDER EFFECTS										
	i/j =	1/2	1/3	1/4	1/5	2/3	2/4	2/5	3/4	3/5	4/5
α_{ij}^{ϕ}		.056	-.357	.691	.318	.243	.475	.157	.399	.620	-.257

PARAMETER	SCALED THIRD ORDER EFFECTS										
	i/j =	1/2	1/3	1/4	1/5	2/3	2/4	2/5	3/4	3/5	4/5
α_{ij}^k											
k=1		—	—	—	—	-.106	-.451	-.554	-.345	-.449	-.104
k=2		—	-.105	-.455	-.579	—	—	—	-.350	-.474	-.124
k=3		-.654	—	-.997	-.543	—	-.342	.111	—	—	.454
k=4		.156	-.003	—	.655	-.159	—	.499	—	.658	—
k=5		.080	-.039	.642	—	-.119	.562	—	.681	—	—

1 = Yodels, 2 = Twinkies, 3 = Devil Dogs, 4 = Milky Way, 5 = Three Musketeers

**TABLE 2
PARAMETER ESTIMATES FROM THE 3RD ORDER MODEL: GROUP-LEVEL, POLITICAL DATA**

PARAMETER	SCALED SECOND ORDER EFFECTS															
$i/j =$	1/2	1/3	1/4	1/5	1/6	2/3	2/4	2/5	2/6	3/4	3/5	3/6	4/5	4/6	5/6	
α_{ij}^{ϕ}	.470	-.301	.223	-.198	.588	-.892	-.139	-1.05	.548	.365	.122	1.015	-.274	.599	.737	

PARAMETER	SCALED THIRD ORDER EFFECTS															
$i/j =$	1/2	1/3	1/4	1/5	1/6	2/3	2/4	2/5	2/6	3/4	3/5	3/6	4/5	4/6	5/6	
α_{ij}^k																
k=1	—	—	—	—	—	.010	-.174	-.261	-.139	-.186	-.261	-.151	-.083	.039	.113	
k=2	—	.182	-.117	-.062	.095	—	—	—	—	-.301	-.248	-.083	.049	.207	.166	
k=3	.293	—	-.248	.030	-.030	—	-.545	-.261	-.329	—	—	—	.278	.215	-.062	
k=4	-.041	.086	—	-.236	.405	.131	—	-.198	.451	—	-.329	.315	—	—	-.652	
k=5	.565	.270	-.301	—	-.041	-.288	-.868	—	-.616	-.580	—	-.315	—	.262	—	
k=6	-.186	-.010	.140	-.105	—	.182	.329	.086	—	.157	-.094	—	-.248	—	—	

1 = BUSH 3 = CARTER 5 = KENNEDY
 2 = BROWN 4 = CONNALLY 6 = REAGAN

Table 2 presents the group parameter estimates from the third order model fitted using six politicians as stimuli. (In this study, the choices of forty graduate students from all subsets of two or more politicians were aggregated to form proportions of votes obtained by each candidate in each subset.) From this table note, for example, that Carter pulls dramatically more from Brown than Connally ($\alpha_{24}^3 = -.545$), and Connally pulls much

more strongly from Reagan than from Kennedy

($\alpha_{56}^4 = .652$).

The research problem investigated here is to develop a more parsimonious manner to display the structure implied by these third order alphas. Clearly, the more choice alternatives or stimuli, the more problem one has in comprehending the managerial implications of these third order effects because of their increasing complexity. Just from progressing from N=5 in Table 1 to N=6 in Table 2, the number of third order alphas double (from 30 to 60)!

We present a new metric multidimensional scaling unfolding (Coombs, 1964) type model to provide a spatial representation of the structure contained in these third order alphas. Our analysis of these parameter estimates provides a joint space of stimuli as "drawers" and "drawees" of market share. That is, each snack food (politician) in Table 1 (Table 2) is represented by two points in the derived dimensional space. One point represents the brand as a drawer of market share where drawee brands located near it would be ones from whom this brand would take market share away. The other point for the brand represents the brand as a drawee of market share from whom drawer brands nearby would be taking away market share. This asymmetric notion of a joint space is discussed in the next section.

**POSITIONING MAPS AND SYMMETRY VERSUS
ASYMMETRY**

In the development of product strategies, marketing management often relies on positioning maps. Whether derived from similarity, "brand-switching", or

some other data, these maps are intended to reflect the degree to which products are competing with each other. The real value of the map stems from the implicit assumption that products close to each other are presumed to be pulling from each other's market shares. The very concept of positioning, for example, is based on the notion that a new product will draw share primarily from products close to the position for which the new product is targeted. But the measures on which the maps are based are not actual measures of relative pull, and the assumption of "distance is inversely proportional to relative pull" is seldom, if ever, validated.

Rather than derive the product map from measures of similarity or "brand-switching" data and assume it reflects the degree to which products pull from each other's market shares, we derive the map from revealed measures of the actual pull itself. Given that we are going to derive positioning maps from revealed substitutability, we next address the issue of symmetry versus asymmetry. Most positioning maps based on measures of perceived similarity have been symmetrical. Indeed, it would probably invite derision if a consumer were asked: "Is A more similar to B or is B more similar to A?" But the assumption of symmetry is easier to question in the context of relative pull, or substitutability.

For example, suppose we ran an experiment in which a subject made repeated choices from the choice sets listed in Table 3. We wish to illustrate a subtle point, concerning asymmetrical relationships between triples of products. First, compare choice sets 2 and 4. Notice that the ratio of DD's share to TM's share in set 2 is 2.03. But in set 4, this ratio increases to 3.41. Thus, when we add MW to the set {DD, TM} we discover that the ratio of DD's share to TM's share increases by 68%. Now compare sets 1 and 4. In set 1 the ratio of DD's share to MW's is 1.38. With the addition of TM, this ratio increases to 2.32, also an increase of 68%. Thus, the rate at which MW pulls from TM versus DD is the same as the rate at which TM pulls from MW versus DD. If we were to try to place these 3 products as points in a *symmetrical* map where distance is inversely proportional to pull, then MW and TM should be equidistant from DD. Assuming this were true, and

therefore that DD was equidistant from TM and MW, the map would imply that DD should pull from MW versus TM in exactly the same proportion. But the data in Table 3 show this is clearly not the case. When DD is added to the set {MW, TM}, DD pulls more from TM than MW. The ratio of MW's share to TM's share goes from .72 to 1.47 because DD pulls more from TM than MW. To state the proposition more generally:

**TABLE 3
CHOICE DATA REVEALING ASYMMETRY**

Choice Set	Products Available		
1	<u>Devil Dogs</u>	<u>Milky Way</u>	
	.58	.42	
2	<u>Devil Dogs</u>	<u>Three Musketeers</u>	
	.67	.33	
3	<u>Milky Way</u>	<u>Three Musketeers</u>	
	.42	.58	
4	<u>Devil Dogs</u>	<u>Milky Way</u>	<u>Three Musketeers</u>
	.58	.25	.17

If two products, A and B, pull equally from a third product, this does not necessarily imply that the third product will pull equally from them.

The point here is that the pattern of substitutability revealed in Table 3 could not be accurately represented in a symmetrical product positioning map. Although this example, based on actual data, shows that an asymmetrical map may be necessary, it is only an example. The need for asymmetry map must be demonstrated empirically using a statistical test. Fortunately, the Batsell-Polking model described earlier allows us to do so. Recall that the

third-order model involves second (α_{ij}^0) and third (α_{ij}^k)

order alphas. A symmetric third order model is one in which:

$$\alpha_{ij}^k + \alpha_{ki}^j + \alpha_{jk}^i = 0 \quad \forall i, j, k.$$

Thus, it is possible to first fit the third-order model which does not assume symmetry and then fit a special case of the third-order model which is symmetric. Because the symmetrical third-order model can be expressed as a linear restriction on the parameters in the full third-order model, a significance test using the F-statistic can be used to decide on the need for a symmetrical versus non-symmetrical representation.

Such a test was performed on the data in the original Batsell-Polking paper on the sets of data presented in Tables 1 and 2. As can be seen from Table 4, in both cases the asymmetric model fit significantly better than the symmetric model $p < .01$ and $p < .01$, respectively. Thus, in each example, there exists sufficient asymmetry so as to warrant an asymmetrical map.

This notion of asymmetry is quite appealing in modelling spatial competitive positionings via two sets of distinct points. It allows for brands to pull from other brands which do not necessarily pull from them. Lattin and McAllister (1983) discuss this issue of "competitive non-symmetry" with respect to their choice model. Tversky (1977) presents a set-theoretical approach to (brand) similarity in which competitive

brands can be represented as collections of features, and similarity (or competitiveness) is described as a feature matching process which is not restricted to be symmetric.

**TABLE 4
STATISTICAL TESTS FOR SYMMETRIC VERSUS ASYMMETRIC MODELS ON THE SNACK AND POLITICAL DATA**

	Data Set	
	Snack Data	Political Data
Error Sum-of-Squares Third-Order Asymmetric	0.5655	2.9743
# Independent Parameters Third-Order Asymmetric	19	29
Error Sum-of-Squares Third-Order Symmetric	1.1621	4.7778
# Independent Parameters Third-Order Symmetric	13	19
F-Value	5.274	7.579
Significance	$p < .01$	$p < .01$

AN UNFOLDING METHODOLOGY FOR NONSYMMETRIC INCOMPLETE PROXIMITIES

The Model

As previously noted, we are interested in providing a spatial representation of brands based on the Batsell and Polking (1985) third order alpha effects where two sets of points are represented--drawers and drawees. Our metric (since the α_{ij}^k are assumed to be interval scales) model assumes:

$$\alpha_{ij}^k \equiv f[d_{ik}^2 - d_{jk}^2], \tag{6}$$

where:

d_{ik}^2 = the squared distance between brand i and brand k in some euclidean space;

d_{jk}^2 = the squared distance between brand j and brand k in the same euclidean space;

$f[\cdot]$ = a linear function.

In addition, we define:

a_{it} = the t-th coordinate for "drawee" i;

b_{kt} = the t-th coordinate for "drawer" k

$$d_{ik}^2 = \sum_{t=1}^T (a_{it} - b_{kt})^2;$$

i, j, k = 1 ... N objects;
t = 1 ... T dimensions.

Thus, $\alpha_{ij}^k < 0$ implies that "drawer" brand k pulls

from i's share proportionately more than it pulls from j's share. Assuming $f[\cdot]$ is linear and positive, this would imply $d_{ik}^2 < d_{jk}^2$ which means that "drawer brand" k pulls

more from "drawee brand" i than "drawee brand" j. Thus, similar to an ideal point unfolding model, the closer a "drawer brand" is to a "drawee brand", the

proportionately more market share the "drawer brand" would pull from that "drawee brand". If $\alpha_{ij}^k = 0$, then

$$d_{ik}^2 = d_{jk}^2 \text{ and the "drawer brand" } k \text{ is equally distant}$$

from "drawee brands" i and j. Similarly, if $\alpha_{ij}^k > 0$, then

$$d_{ik}^2 > d_{jk}^2 \text{ and the "drawer brand" } k \text{ is closer to "drawee}$$

brand" j than to "drawee brand" i.

The general model in expression (6) is similar to Torgerson's (1958) method of triads where stimuli are presented in triples or triads to the respondent and he/she is asked to make similarity judgments. From these triadic comparisons, Torgerson (1958) obtains, over all subjects, the proportion of times any stimulus k is judged more similar to stimulus i than to j. He then models the true proportion above as a function of the corresponding difference in distance ($d_{jk} - d_{ik}$).

We assume that $f[\cdot]$ in (6) is linear, so that (6) becomes:

$$\alpha_{ij}^k \equiv c_1 (d_{ik}^2 - d_{jk}^2) + c_2, \tag{7}$$

where c_1 is a multiplicative constant¹ ($c_1 \geq 0$), and c_2 is an additive constant.²

Substituting for d_{ik}^2 and d_{jk}^2 terms in (7) and expanding

renders:

$$\begin{aligned} \alpha_{ij}^k &\equiv c_1 \left[\sum_{t=1}^T (a_{it}^2 - a_{jt}^2) + 2 \sum_{t=1}^T b_{kt}(a_{jt} - a_{it}) \right] + c_2 \tag{8} \\ &= \alpha_{ij}^k. \end{aligned}$$

The estimation problem in this deterministic model is to estimate a_{it} , b_{kt} , c_1 , and c_2 , for $i, k = 1 \dots N$, so as to minimize the sums of squares loss function below:

$$\text{Min}_a Z = \sum_{k=1}^N \sum_{i \neq k}^N \sum_{j > i}^N [\alpha_{ij}^k - \alpha_{ij}^k]^2 \tag{9}$$

An alternating least-squares algorithm (Wold, 1966) is described in Appendix I which utilizes a conjugate gradient method to estimate a_{it} and b_{kt} in the first phase of the algorithm, and OLS to estimate c_1 and c_2 in the second phase of the algorithm. This alternating estimation procedure terminates when convergence is reached. Since the objective function in (9) is continuous and has a lower bound of $Z = 0$, and since each phase of the algorithm can be shown to conditionally reduce Z (holding the other set of parameters fixed), one can use a limiting sums argument (Courant, 1965) to show that the procedure will converge to at least a locally optimum solution.

Depending upon assumptions made concerning the scale of α_{ij}^k (either interval or ratio), one could use either

a variance accounted-for measure (R²) or a sums-of-squares accounted-for measure (see DeSarbo, et. al., 1982). A ratio scale assumption would entail setting $c_2 = 0$, while an interval scale assumption would have c_2 being freely estimated as an additive, empirical constant.

Note that the model degrees of freedom for expression (8) is equal to $R - T(2N) + T(T+1)/2 - 1$, where R equals the number of 3rd order alphas and $T(T+1)/2$ is added due to the centering and rotational indeterminacies inherent in MDS unfolding models³.

Major Program Options

Symmetry

The methodology also allows the user to estimate one set of coordinates for both "drawer" and "drawee" brands ($a_{it} = b_{it} \forall i, t$). The use of such a symmetry option is tantamount to assuming a symmetrical "drawer" and "drawee" competitive structure—that a brand pulls market share from brands that pull market share from it. One can view such a model being nested in the more general model expressed in equation (5) allowing for asymmetric effects.

3 As in all two-way simple unfolding models, indeterminacies exists with respect to centering both sets of points and rotating both sets via a (non-singular) orthogonal rotation. We can rewrite the squared distance d_{ik}^2 as:

$$d_{ik}^2 = (\underline{a}_i - \underline{b}_k)'(\underline{a}_i - \underline{b}_k),$$

where \underline{a}_i is a $T \times 1$ vector of coordinates for "drawee brand" i and \underline{b}_k is a $T \times 1$ vector of coordinates for "drawer brand" k. As such, one can pre-multiply each set of coordinates by a nonsingular matrix \underline{M} and still obtain the same d_{ik}^2 above if $\underline{M}'\underline{M} = \underline{I}$, the $T \times T$ identity matrix. Our procedure has an option to center the resulting joint space with respect to the origin.

1 Note that c_1 is not identifiable in the linear form of equation (7) since it can be embedded in both the a_{it} 's and b_{kt} 's and then be set to 1. However, c_1 can be gainfully utilized to signal "anti-ideal point" solutions ($c_1 < 0$) and is thus included in the model. In addition, its estimation in the two-stage algorithm employed proves to accelerate convergence.

2 c_2 is not to be confused with the traditional definition of an additive constant defined as the smallest number added to the proximities so as to have a metric defined (i.e., satisfaction of the triangle inequality for all triples of points). Here, c_2 is solely an empirical value to be estimated under assumptions of an interval scale in order for the predicted values to best fit the input proximities. Note that one can not easily apply the traditional solution to the additive constant problem to asymmetric proximities since one side of the corresponding triangle or triple of points will always be missing with such data. Furnas (1987) is currently pursuing a theoretically correct solution to this additive constant problem for asymmetric proximities using a four point condition.

Linear Restrictions

The methodology contains an option to allow the user to constrain the coordinates of "drawer brands" to be linear functions of some specified set of background or feature/attribute variables. As in CANDELINC (Carroll, Pruzansky, and Kruskal, 1979) and in GENFOLD2 (DeSarbo and Rao, 1984; 1986), one can impose the reparameterization that:

$$b_{kt} = \sum_{\nu=1}^L X_{k\nu} \delta_{\nu t} \quad (10)$$

where:

$X_{k\nu}$ = the value of the ν -th attribute/feature of drawer k ,

$\delta_{\nu t}$ = the impact coefficient of the ν -th attribute/feature on the t -th dimension;

$\nu = 1 \dots L$ attributes/features.

Such a reparameterization aids in the interpretation of the derived space, as well as providing a basis for "positioning" drawer brands by manipulating such attributes/features (as in GENFOLD2 (DeSarbo and Rao, 1984, 1986)). This option also aids in interpreting the derived dimensions by providing estimates of $\delta_{\nu t}$ which can be plotted in T dimensions to examine which attributes/features load highly on either positive or negative ends of the derived dimensions. The positioning by attributes/features can be done after the $\delta_{\nu t}$'s have been estimated. Assuming a target location,

b_{kt}^* has been established for brand k , one can then solve

for $X_{k\nu}^*$ such that $b_{kt}^{\wedge} = \sum_{\nu=1}^L X_{k\nu}^* \delta_{\nu t}$ is as close to b_{kt}^* as

possible (see DeSarbo and Rao, 1984, 1986 for a further discussion of the use of such reparameterized models).

As in the previous discussion of the symmetric model, one can view the reparameterized model in expression (10) as nested within the general model as long as $L < N$. To date, such linear restrictions have only been implemented for "drawer" brands because of the more interesting marketing strategy questions that can be asked concerning their positioning and market share. Such an option could easily be extended to "drawee" brands also.

Monte Carlo Analyses

Because of potential problems that could theoretically arise from local minimum solutions, some eight different Monte Carlo runs were performed using synthetic, error-free data. Here, synthetic data were generated which fit the model exactly. A 2 X 2 X 2 full factorial design was used to generate data according to different size N (5, 7), symmetric/asymmetric, and restrictions/no restrictions. In all eight runs, the global optimum solutions were obtained, producing R^2 's = 1.00. While this provides some evidence concerning the viability of the algorithm, more testing is required. The impact of adding error generated from various distributions should be investigated. A wider range of number of stimuli (N) should also be tested.

APPLICATIONS

Snack Foods

Recall that Table 1 presents the individual parameter estimates from the Batsell and Polking (1985) third order model using $N = 5$ snack items that will be used as input to our new unfolding methodology. With only 30 third-order alphas, no more than 3 dimensions can be derived in an asymmetric space. (A 3-dimensional solution for an asymmetric representation would involve 30 observations and 25 independent parameters.) Table 5 presents the results for a 1- and 2-dimensional asymmetric representation. The 2-dimensional solution appears to better describe the data in that it accounted for 20% more variance than the 1-dimensional solution and the R^2 is .998. (Note that in the 2-dimensional asymmetric solution there are 30 observations and 18 independent parameters resulting in only 12 degrees of freedom.)

**TABLE 5
UNFOLDING RESULTS FOR ASYMMETRIC
ANALYSIS OF SNACK FOOD DATA**

T	R ²	Sum of Squares Accounted for	Number of Iterations Required for Convergence
1	.793	.799	14
2	.998	.998	18

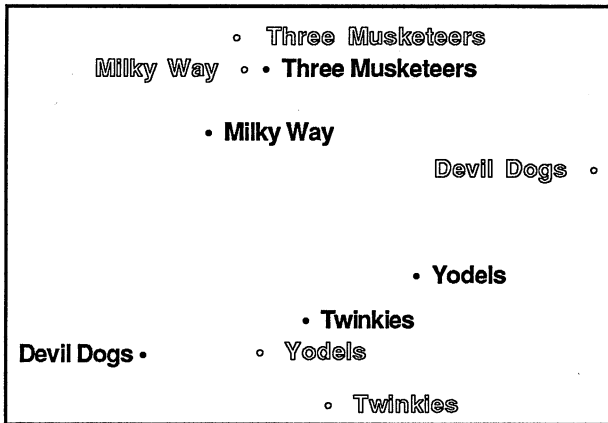
Figure 1 presents the joint space snack food solution for "drawers" (white) and "drawees" (black). The solution shows that:

- 1) the 2 candy bars tend to pull share primarily from each other and not from the cake-like items;
- 2) Devil Dogs pulls the most from Yodels, but seems to exert about the same degree of pull on the candy bars as it does on the other cake-like items;
- 3) in contrast to Devil Dogs, Yodels and Twinkies pull primarily from the cake-like items as opposed to the candy bars;
- 4) Yodels and Twinkies pull more from Devil Dogs, than Devil Dogs pull from Yodels and Twinkies;
- 5) Yodels pull slightly more from Twinkies than Twinkies pull from Yodels.

Perhaps the unusual role played by Devil Dogs is caused by the fact that in contrast to the other 2 cake-like products which are yellow-cake, Devil Dogs is all chocolate - both cake and icing. This may help explain its unusual role since the candy bars are perceived as primarily chocolate candy bars.

To compare the asymmetric representation with a symmetric one, a symmetric ($A = B$) model was estimated in $t = 1, 2$, and 3 dimensions. (Note that one can estimate more dimensions here because the explicit constraint that drawer = drawee coordinates improve the degrees of freedom for estimation.) Table 6 shows the results for each of the 3 solutions. Although the asymmetric model results are not much better than the symmetric model results for the 1-dimensional solution, the difference between the goodness-of-fit statistics for $T = 2$ dimensions is striking.

Figure 1
Asymmetric Cannibalization Map for the
Snack Food Example



Snack foods as "drawers" in white
Snack foods as "drawees" in black

Figure 2
Symmetric Cannibalization Map for the
Snack Food Example

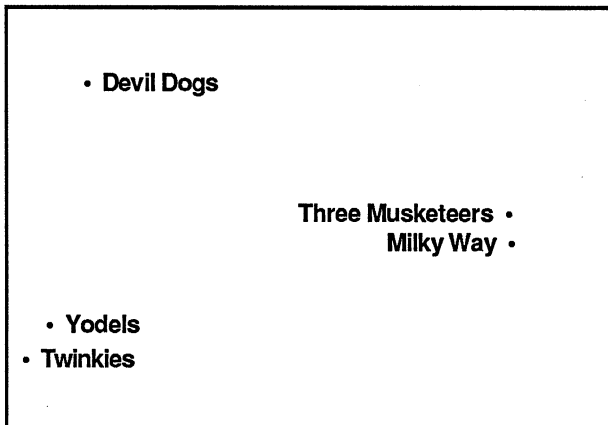


TABLE 6
UNFOLDING ANALYSIS FOR SYMMETRIC
ANALYSIS OF SNACK FOOD DATA

T	R ²	Sum of Squares Accounted for	Number of Iterations Required for Convergence
1	.743	.752	3
2	.771	.779	4
3	.809	.815	7

Figure 2 displays the 2-dimensional symmetric solution which fails to capture the asymmetries in competition as noted earlier.

Politicians

As noted, Table 2 presents the group parameter estimates from the Batsell and Polking (1985) third order model using N = 6 politicians. The unfolding model was run in 1 and 2 dimensions for the asymmetric solution (more dimensions can be estimated, but given the R² = .990 for the T = 2 solution, the utility of estimating further dimensions is again questionable). Table 7 presents the goodness of fit statistics and convergence information for both runs. As shown, the 2-dimensional solution appears to better describe the structure in these third order alphas accounting for an additional 18% of the variance than the 1-dimensional solution. Figure 3 displays this 2-dimensional joint space where politicians in white are drawers and politicians in black are drawees. From this joint space plot, several interesting notions, as found in Batsell and Polking (1985), are apparent.

TABLE 7
UNFOLDING RESULTS FOR ASYMMETRIC
ANALYSIS OF POLITICIAN DATA

T	R ²	Sum of Squares Accounted for	Number of Iterations Required for Convergence
1	.810	.814	8
2	.990	.991	19

Reagan (drawer) pulls dramatically more from Connally (drawee) than the other candidates. Similarly, Connally (drawer) pulls dramatically more from Reagan (drawee) than the other candidates. Bush, Brown, and Carter, as drawers, pull away share from each other.

As in the previous example with snack foods, the symmetric model was also fitted to these data and compared to the asymmetric model. Table 8 displays the results for the 1-, 2-, and 3-dimensional (since there are more degrees of freedom) solutions. For the symmetric space, it is not as clear that two dimensions best describe the structure in the third order alphas. A comparison of the symmetric and asymmetric 2-dimensional solutions shows that the asymmetric solution does explain considerably more variance than the symmetric solution. The corresponding statistics displayed in Table 8 show that the additional third dimension adds little to the explanatory power of the symmetric model in this instance.

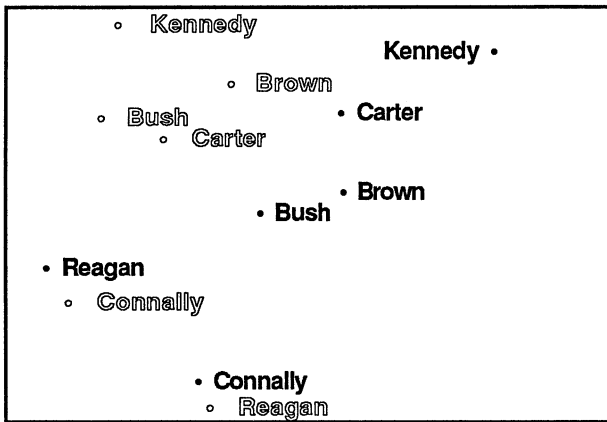
TABLE 8
UNFOLDING RESULTS FOR SYMMETRIC
ANALYSIS OF POLITICIAN DATA

T	R ²	Sum of Squares Accounted for	Number of Iterations Required for Convergence
1	.555	.563	4
2	.649	.656	3
3	.678	.683	8

The resulting 2-dimensional *symmetric* solution is displayed in Figure 4. The figure indicates that a 1-dimensional solution here might be the most

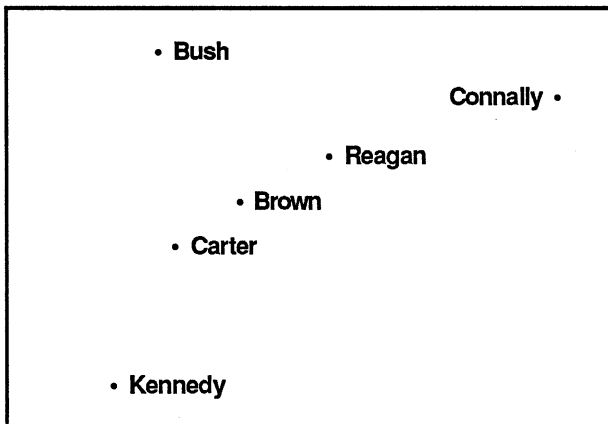
parsimonious of the (inferior) symmetric solutions since most politicians (except Bush) lie close to a 45° line. Projecting coordinates onto this line, one obtains a Conservative-Liberal dimension where Connally, Bush, and Reagan are on the conservative end and Brown, Carter, and Kennedy are on the liberal end. But, the symmetric model does not adequately account for the asymmetric structure in these third order alphas.

Figure 3
Asymmetric Cannibalization Map for the Politician Example



Politicians as "drawers" in white
Politicians as "drawees" in black

Figure 4
Symmetric Cannibalization Map for the Political Example



Discussion

We have proposed a new unfolding MDS methodology to investigate competitive positionings of various stimuli/brands in a joint space of "drawers" and "drawees" of market share. The process of estimating two sets of coordinates for a stimulus in a T dimensional Euclidean space is tantamount to specifying non-symmetric distance relationships between the stimuli

(i.e., $d_{ij} \neq d_{ji}$). The resulting spatial representation greatly aids in easily interpreting the competitive structure that exists between various brands, as contrasted to investigating complex tables of third order alphas such as those presented in Table 2. This is especially the case when N becomes large. Such visual portrayal of competitive positioning sheds light into marketing strategy considerations concerning the respective brands of interest. For example, Figure 3 demonstrates that Reagan would have benefited most if Connally withdrew from the race. It also demonstrates which subset of candidates are most competitive or threatening to some candidate of interest.

More work is required concerning additional Monte Carlo analyses for a variety of sizes of stimuli (N) and error levels introduced into the data. In addition, more experience with actual data sets is required. Perhaps the most interesting example would be one with linear restrictions where, say, there was a design matrix of background characteristics which were strongly related to the positioning of the brands in the coordinate space. Once impact coefficients δ_{it} were estimated, normative strategies could be tested by altering and examining new "repositionings" as in GENFOLD2 (DeSarbo and Rao, 1984, 1986).

Appendix I
An Alternating Least-Squares Algorithm for the Asymmetric Unfolding Model

Phase I: Input Options

The user must specify T (the number of dimensions for the analysis), IT* (the maximum number of major iterations allowed), MIT* (the maximum number of minor iterations allowed), TOL (the convergence tolerance), whether a symmetric or nonsymmetric analysis is desired, and whether linear restrictions are imposed on the drawer set of coordinates. Default values of TOL = .001, IT* = 50, and MIT* = 3 work quite well in Monte Carlo analyses performed on synthetic data.

Phase II: Starting Estimates

Set IT = 0. The user can specify his/her own starting values for c_1 , c_2 , $\underline{A} = ((a_{it}))$ and $\underline{B} = ((b_{kt}))$ or $\underline{\delta} = ((\delta_{it}))$, or have them (\underline{A} , \underline{B} or $\underline{\delta}$) generated randomly with $c_1 = 1$ and $c_2 = 0$ initially.

Phase III: Estimate A, B or δ

Set IT = IT + 1. This phase of the algorithm estimates \underline{A} and \underline{B} (or $\underline{\delta}$), holding c_1 and c_2 set at their current values. Conditional estimates of \underline{A} and \underline{B} (or $\underline{\delta}$) are sought to minimize the sum of squares loss function in expression (9). The method of conjugate gradients (Fletcher and Reeves, 1964) is utilized to solve this unconstrained optimization problem. Assuming the loss function obeys typical regularity conditions, one can take partial derivatives of expression (9) with respect to the desired set of parameters:

$$\frac{\partial Z}{(\partial a_{it})} = -4c_1 \sum_{k \neq i, j \neq k}^N \sum_{j > i}^N [\alpha_{ij}^k - \alpha_{ij}^k] \cdot (a_{it} - b_{kt}) \quad (A-1)$$

$$\frac{\partial Z}{(\partial b_{kt})} = -4c_1 \sum_{i \neq k}^N \sum_{j > i}^N [\alpha_{ij}^k - \alpha_{ij}^k] \cdot (a_{jt} - a_{it}) \quad (A-2)$$

$$\frac{\partial Z}{(\partial \delta_{it})} = -4c_1 \sum_{k=1}^N \sum_{i \neq k}^N \sum_{j > i}^N [\alpha_{ij}^k - \alpha_{ij}^k] \cdot X_{kt}(a_{jt} - a_{it}) \quad (A-3)$$

For the symmetric case, $a_{it} = b_{it}, \forall i, t$. For sake of convenience, let's assume that the relevant parameters to be estimated are contained in the vector $\underline{\theta}$ and that $\underline{\nabla Z}$ is the vector of relevant partial derivatives for this desired set of parameters. Then, the complete conjugate gradient procedure can be summarized as follows:

- (i). Start with initial parameter estimates $\underline{\theta}(1)$; set MIT = 1.
- (ii) Set the first search direction

$$\underline{S}(1) = -\underline{\nabla Z}(1).$$

- (iii). Find $\underline{\theta}(2)$ via:

$$\underline{\theta}(2) = \underline{\theta}(1) + u(1) \underline{S}(1), \quad (A-4)$$

where $u(1)$ is the optimal step length (obtained through quadratic interpolation) in the direction $\underline{S}(1)$. Set MIT = 2.

- (iv). Calculate $\underline{\nabla Z}(2)$ and set

$$\underline{S}(MIT) = \underline{\nabla Z}(MIT) + \frac{(\underline{\nabla Z}(MIT))(\underline{\nabla Z}(MIT))}{(\underline{\nabla Z}(MIT-1))(\underline{\nabla Z}(MIT-1))} \underline{S}(MIT-1). \quad (A-5)$$

- (v). Compute the optimal step length $u(MIT)$ in the direction $\underline{S}(MIT)$, and find:

$$\underline{\theta}(MIT+1) = \underline{\theta}(MIT) + u(MIT) \underline{S}(MIT). \quad (A-6)$$

- (vi). If $\underline{\theta}(MIT+1)$ is optimal and/or satisfies the minor iteration tests, stop. Otherwise set MIT=MIT+1 and go to step (iv) above (i.e., undertake another minor iteration). A number of convergence tests are performed in this minor estimation cycle to test whether additional iterations of the conjugate gradient procedure are necessary or beneficial:

- If MIT \geq MIT*, stop;
- If $\|\underline{\nabla Z}(MIT)\| \leq$ TOL, stop;
- If $(Z(MIT-1) - Z(MIT)) \leq$ TOL, stop.

It has been demonstrated empirically that conjugate gradient procedures can avoid the typical "cycling" often encountered with steepest descent algorithms. In addition, they demonstrate valuable quadratic termination (Himmelblau, 1972) properties -- i.e., conjugate gradient procedures will typically find the globally optimum solution for a quadratic loss function in H steps, where H is the number of parameters to be solved for.

Phase IV: Estimate c_1 and c_2

This phase of the algorithm estimates c_1 and c_2 , holding \underline{A} and \underline{B} (or $\underline{\delta}$) fixed as estimated from the previous phase. We calculate α_{ij}^{*k} via:

$$\alpha_{ij}^{*k} = (d_{ik}^2 - d_{jk}^2) = \sum_{t=1}^T (a_{it}^2 - a_{jt}^2) + 2 \sum_{t=1}^T b_{kt}(a_{jt} - a_{it}) \quad (A-7)$$

Let r be the number of independent α_{ij}^k 's estimated and \underline{d} be the $r \times 1$ vector of α_{ij}^k 's. Let \underline{e} be the $r \times 1$

vector of α_{ij}^{*k} 's and $\underline{1}$ be an $r \times 1$ vector of 1's. Define $\underline{E} = [\underline{1}, \underline{e}]$ of order r by 2. Then estimates of c_1 and c_2 can be found which conditionally minimize expression (9) via "one pass" of OLS:

$$\begin{bmatrix} \hat{c}_2 \\ \hat{c}_1 \end{bmatrix} = (\underline{E}'\underline{E})^{-1} \underline{E}'\underline{d}. \quad (A-8)$$

Phase V: Major Iteration Tests

A number of convergence tests are performed after a complete major iteration cycle (completing phases ii-iv) to test if additional computation is necessary:

- If $IT \geq IT^*$, go to Phase vi;
- If $|Z^{(IT-1)} - Z^{(IT)}| < TOL$, go to Phase vi; else, go Phase iii.

Phase VI: Output and Diagnostics

All parameter values are printed with final IT value, R^2 , Z , and sums of squares accounted for statistics. Correlations between dimensions are output within coordinate sets for \underline{A} , \underline{B} , and $\underline{\delta}$. Options exist for applying a principal factor rotation to \underline{A} or \underline{B} (see Footnote 3). Residual plots of α_{ij}^k vs α_{ij}^k , α_{ij}^k vs $(\alpha_{ij}^k - \alpha_{ij}^k)$, and α_{ij}^k vs $(\alpha_{ij}^k - \alpha_{ij}^k)$ are output to detect potential

outliers. Finally, \underline{A} and \underline{B} intersets distances are calculated and printed.

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Deep Meaning in Possessions: The Paper

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Abstract

This paper outlines the topics illustrated in the videotape "Deep Meaning in Possessions: Qualitative Research from the Consumer Behavior Odyssey" shown during the ACR conference session entitled "Findings from the Consumer Behavior Odyssey."

Introduction

The videotape, "Deep Meaning in Possessions: Qualitative Research from the Consumer Behavior Odyssey," emerged from a project that has come to be known as the Consumer Behavior Odyssey. It was written and directed by Melanie Wallendorf and Russell Belk, and produced by Melanie Wallendorf, Russell Belk, Tommy O'Guinn, Deborah Heisley, and Scott Roberts (1987). Originally produced as the final report to the Marketing Science Institute for partial funding of the Odyssey Project, the videotape is available for purchase in 1/2 and 3/4 inch format from the Institute's Cambridge, Massachusetts office. The rationale for producing a videotape rather than a manuscript is that a manuscript cannot capture the richness of the audio and visual data gathered in this project. Consistent with that rationale, all this paper attempts is an outline of the topics illustrated on the videotape. There are just some things that a paper can't do for a research project. So, see the videotape.

The Consumer Behavior Odyssey Project

The video begins with a description of the Consumer Behavior Odyssey. The Consumer Behavior Odyssey involved almost two dozen academic researchers who traveled for varying periods of time in a recreational vehicle from Los Angeles to Boston during the summer of 1986. The Odyssey project team observed consumers in naturalistic settings and conducted qualitative interviews. This unique research project was made possible by funding from several organizations: Foote, Cone and Belding, Hilton International, Needham Harper - Worldwide, Northwestern University, University of Arizona, University of California at Los Angeles, University of Illinois, University of Utah, Washington State University, and the participants themselves. A key feature of this project was the large number of researchers involved. Meetings at conferences to plan the project began a year and a half prior to launching the major data collection. A pilot project was conducted at one consumption venue, a swap meet, as a demonstration and test of the methods (Belk, Sherry, and Wallendorf 1988). The results of the pilot guided the plans that were then made for the two months of travel (For a more detailed accounting of the history of this project, see Kassarian 1986). Participants prepared by reading, taking video classes, and exchanging memos concerning interests. Each participant differed in extent of involvement, methodological perspectives, skills, and substantive interests. Participants included: Russell Belk, Joe Cote, Jeff Durgee, Valerie Folkes, Deborah Heisley, Morris Holbrook, Bernard Jaworski, Vic Johar, Harold Kassarian, Deborah MacInnis, Mary Ann McGrath, Tommy O'Guinn, Rick Pollay, Scott Roberts, John

Schouten, Rich Semenik, John Sherry, Alladi Venkatesh, and Melanie Wallendorf.

Qualitative Methods Used

The Odyssey team used a number of qualitative data collection and analysis methods during its naturalistic inquiry (Lincoln and Guba 1985). These methods are discussed more fully in the videotape, but are listed in Table 1 and outlined below.

Table 1
Methods Used by the Consumer Behavior Odyssey

Data Collection Methods:	Data Analysis Methods:
Depth interviewing	Purposive sampling
Group interviewing	Emergent research design
Participation	Triangulation
Observation	Travel from site to site
Still photography	Member check
Autodriving	Memoing
Audio recording	Audit
Videorecording	
Field note and journal recording	

Depth interviews were conducted with many of the informants who participated in the project (in naturalistic inquiry, people who confide in researchers are commonly referred to as informants, rather than subjects or respondents, because this term more appropriately characterizes their participation in the relationship). *Group interviews* were used when groups were the relevant unit of analysis. *Participation* in consumer activities of interest was often employed, along with non-participant *observation* and *photography* of consumption activities. Another use of the photos taken was in *autodriving*—a technique which uses photographs of informants as projective stimuli in interviewing them about their behavior (Heisley and Levy 1987). Occasionally, interviews were recorded using microcassette *audio recorders*. More often, in order to also capture nonverbal information, interviews were *videorecorded*. The major record of interviews and observations was researcher *fieldnotes*. Fieldnotes represent the researcher's written attempt to express and preserve her/his view of the situations and occurrences that exist during observation and interviewing. A quite different form of record kept was the *journal* of each researcher. The journal is a more introspective record of the research process, intended to reveal personal biases, reactions, and emerging interpretations of what is being learned. This is crucial since the researcher is the instrument in naturalistic inquiry. These data collection methods resulted in approximately 800 pages of researcher field notes and journals, 4000 still photographs and slides, 140 videotapes lasting 15-18 minutes each, and a file of miscellaneous artifacts collected during the journey. This data, along with other

materials from the Odyssey project, are available to researchers through an archive housed at the Marketing Science Institute in Cambridge, Massachusetts.

The Odyssey team also used a wide variety of data analysis and interpretation methods. *Purposive sampling* was employed to select informants who would maximally enrich and/or challenge the interpretations as they emerged. For example, a Catholic nun and homeless people provided contrasts to more noticeably materialistic consumers. Such extreme contrasts helped the team detect themes more quickly and examine apparent exceptions (Glaser and Strauss 1967). Because purposive sampling is part of *emergent research design*, the sample in naturalistic inquiry cannot be fully specified ahead of time. An additional feature of the methodological approach used in this project was the *travel from site to site*. This enabled the team to make comparisons across sites, informants, researchers, and methods. These comparisons are called *triangulation* and help researchers assess data quality as well as breadth of coverage. Another way of checking researchers' interpretations involves *member checks*. In this procedure, results are written up and shown to informants who assess whether these results seem to ring true. Purposive sampling and thematic analysis began in the field with verbal and written memos between researchers. The *memoing* procedure helped plan data collection and structure early analysis, and was routinized by nightly discussions called Daily Odyssey Audits. A final method employed was an *audit* conducted after drafting a revised report in response to member check feedback. The external auditor's role involves examining the full set of data, comparing it to the conclusions drawn, and assessing the faithfulness or plausibility of the interpretations.

The ethnographic approach of naturalistic inquiry has a goal of generating what anthropologist Clifford Geertz calls thick description (1973). If successful, thick description will provide readers or viewers with the feeling that they have begun to *know* the informants, sites, and other phenomena of interest. To begin to develop an understanding of the deep meaning that people attach to certain possessions, the video shows portions of interviews with several consumers.

Findings Concerning Deep Meaning

The video concentrates on one central finding of the Consumer Behavior Odyssey—the deep meaning of possessions for consumers. Informants often regarded some of their possessions as more than merely utilitarian things, i.e. these possessions held deep meaning in their lives. In analyzing the data to gain a fuller understanding and explanation of the nature of this issue, we determined the presence of several themes which help organize the expressions of these deep meanings. These are consistent with themes that have been found by sociologists and anthropologists to explain a wide spectrum of human behaviors, yet these themes have not been applied specifically to consumer behavior before. The video concentrates on four of these themes: 1) extensions of self, 2) fetishism, 3) anthropomorphism and totemism, and 4) sacred and profane distinctions. Each of these themes involves a different, but not mutually exclusive, type of deep meaning in possessions.

In relating to possessions as a part of one's "extended self," people feel that their sense of self is intensified by what they have or diminished by what

they have lost (Belk 1987). Motor vehicles, collections, and family photographs were all found to commonly provide an enlarged sense of self when they were selectively nurtured and preserved, and a diminished sense of self and ensuing period of grieving when they were lost or damaged (or when it was anticipated that nobody would care about the possessions once the owner died). Even when possessions have been temporarily or permanently left behind, there is a portion of the self which remains vested in them. Photographs are sometimes used to document an extension of the self, thereby preserving it and allowing it to be shared with others. Loss of self through damage to such possessions is also sometimes documented photographically, again preserving and also allowing the grieving process to become social.

A second emergent theme which helps explain the deep meaning of possessions is fetishism. Fetishism is evidenced by extreme attention or devotion to certain classes of possessions. Fetishistic consumption behaviors were sometimes described as addictive or compulsive by informants. In other cases, informants did not consciously recognize that they had made fetishes of particular objects or consumption themes, but their behavior suggested that these possessions had indeed been elevated to the status of a fetish (see Belk, Wallendorf, Sherry, Holbrook, and Roberts 1987 and Holbrook 1987).

Anthropomorphism and totemism were complementary but distinct themes in the deep meaning of possessions. In the case of anthropomorphism, informants projected human traits onto possessions. These possessions were sometimes inanimate objects and sometimes pets. Anthropomorphised possessions may serve as replacements for other desired but unattained aspects of life, such as the completion of a family or pride in accomplishments. In contrast, totemism involves deriving and sustaining personal traits and abilities from a possession or group of possessions. Totemic possessions reflected not only an extended sense of self, but also the drawing of strengths from the possession.

Perhaps the most dominant leitmotif of deep consumption meaning was the sacred status that certain possessions often held for informants. Consumer behavior regarding such possessions is different from the behavior which pertains to profane ordinary commodities (see Belk, Wallendorf, and Sherry 1987). Sacred objects are seen as mystical, powerful, and deserving of reverential behavior, as opposed to the ordinary, common, and mundane behavior accorded profane commodities. Sacred consumption objects, although secular in nature, were treated in much the same way as sacred religious icons, and were thus "above price" and removed from the vulgar world of commerce.

Conclusions

Through these four themes, this research has attempted to understand deep meanings in possessions. The video conveys a portrait of consumer behavior that emerged when we examined the meaning of consumption rather than the buying process. It did not emerge from the research methods or philosophy upon which the field has typically relied. Thus, the focus and findings of this project are different from those that have characterized previous consumer behavior research.

Although the project was unusual in some respects, in other ways it is similar to other research. Its

findings are replicable and were produced through systematic data collection and analysis.

Unlike most field studies, this project is not an ethnography of a particular site, other than the broad context of American consumption. Rather than focusing on a particular site or a particular type of product, its focus is on how people describe their consumption and the deep meanings this consumption can have for them. They do not see their consumer behavior as a purchase process, as have many academic and corporate researchers. Instead they see their consumption as a pervasive and sometimes important part of their lives.

While everyone knows that consumers are human, we don't always conduct our research with that in mind. Consumers *are* human. They live in a world that cannot be reduced to the momentary act of buying. People derive meaning in their lives through the consumption of objects they have already acquired. This project was an attempt to better understand that meaning.

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Interpreting Consumer Mythology: A Literary Criticism Approach to Odyssey Informant Stories

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Abstract

This paper proposes that researchers explore deep meanings of consumers' stories about products by applying structural analytic methods from literary criticism. Recent analytical methods by Scholes (1985) are described and applied to interpret seven stories told by informants during the 1986 Consumer Behavior Odyssey. Key themes that emerged in the analyses concern buyer-seller status relationships, metaphoric properties between consumers and products, and shared sacred vs. private sacred possessions.

Introduction

In 1981 Sidney Levy published an article in which he described how to apply structuralism, an analytic method borrowed from literary criticism, philosophy and anthropology to interpret folktales, anecdotes and stories consumers tell about using products. This was a seminal article in the study of consumption symbolism having had a direct influence on many subsequent articles (e.g., Hirschman, 1986; McCracken, 1986).

In the article, Levy places consumer stories and anecdotes in the general category of projective data, and analyzes a set of them by showing how they "structure" or interrelate user characteristics, settings and product attributes. Stories about food and eating habits, for example, tend to associate middle class people with conventional settings and salty foods such as french fries, pot roast, and green beans. The analysis ends in a large diagram showing how consumers might cognitively structure dozens of personality and demographic characteristics, food qualities, and individual food types.

Like many articles on structuralism (e.g., Ray, 1984 and Harari, 1979), however, it does not provide clear direction on how to get from story to structural interpretation. While there is extensive coverage of results, there are few examples of food and eating stories per se and how they were "deconstructed" to yield results in the diagrams. Second, the results focus mainly on attributes and objects in the stories rather than sequences of events, on discourse rather than story line. A story's appeal lies mainly in the sequence of events (what happens next?), so this should be addressed in the analysis as well. Finally, the article draws methods mainly from structural anthropology. A more balanced view might also draw on structural methods from literary criticism (e.g., Scholes, 1982).

The purpose of this paper is to apply recent advances in structuralism by literary critics and philosophers including Scholes (1985), Hawkes (1972) and Sturrock (1979) to understanding stories told by respondents during the 1986 Consumer Behavior Odyssey. While the main analytic tool is structuralism, other methods from literary critics will be used as well including plot theory analysis (Friedman, 1975) and symbolism (Frye, 1957). The most recent trend in literary criticism is not based on one particular method versus another but rather on methodological pluralism (Friedman, 1975) to get at the "total meaning of a work," so our approach will be roughly the same. Output will consist of issues, thoughts and hypotheses about consumer behavior, including making, selling, buying,

using, losing and finding consumer goods. The Levy article was mainly about food and how meanings are structured around American food and eating habits. This article is not about one particular subject but rather attempts to show how consumer stories can be analyzed to yield novel hypotheses about a wide range of consumption issues.

The next section describes what a "story" is and how stories are valuable in consumer research. The following section describes the structuralist method, and applied it to explain a story about cocaine dealing. The main section of the report then analyzes 7 stories, drawing major themes from each as well as what the story tellers and stories "say" about these themes.

Stories

There are two types of responses given by respondents in qualitative research: perceptions and stories. Perceptions include all generalizations about past experiences, for example, "those cars are too fast." Stories, in contrast, describe concrete individual experiences. People tell stories to each other in order to share each other's experiences (vicarious enjoyment) as well as enjoy the suspense awaiting the outcome or climax (Benjamin, 1969). It is often said that sex is the recreation of the poor, yet storytelling is a day-to-day recreation for everyone. Shared folklore and myths promote group solidarity (Levy, 1981), and provide status and self-esteem to storytellers.

Stories are useful to consumer researchers for several reasons. First, emotionality of a product is most intense in stories. No one has a story about wearing a diamond yet everyone has a story about the night they became engaged. Second, stories characterize the "group aesthetic" of the people they are told among. For example, during the Odyssey, it was noted that stories among downscale respondents had more overt-emotional content whereas stories told among upscale respondents more often dealt with themes of individuals overcoming, through intelligence, perception and hard work, obstacles in careers and daily life (e.g., one woman told a story about "finding herself" in her career as an interior designer). Hirschman (1983) notes the difficulty in doing marketing research for creative products (movies, plays) yet novelists have borrowed plots and characterizations from their "market"--every day people--for years. Third, stories are unsurpassed for their expressive content. They convey not only what happened but also the associated emotionality of the events as well as the storyteller's motives and, structuralist anthropologists argue, the unconscious mental organization of entire cultures.

As evidence of the expressive power of stories, consider the consumer comment "oatmeal is good, reliable food" as opposed to this story by an older black woman interviewed during the Odyssey:

(As a young woman): She used to cry all of the time when she was married, and her stomach would be tied up in knots when her husband would come home. She used to pray and pray and finally

God told her that she should leave her husband and take her 4 children and start a new life. For 6 months she got ready to leave. She prayed to the Lord the whole time. Her husband didn't know what she was planning. She would wash towels and sheets and put them away in boxes. She would tuck away a dollar here and there. At the end of 6 months, she called up her brother on a Saturday and told him to come over and bring some friends and help her move the boxes. He came and by Sunday morning she was cooking oatmeal on a hot plate plugged into an outlet in the hallway in her new apartment.

The contrast here between the trauma and unsettledness of this woman's married life and sudden move versus the reliable homeyness of cooking oatmeal makes these properties of oatmeal all the more vivid.

Story Definition

For the purpose of this report, a "story" is defined here as a verbal representation of some sequence of events which include:

- o a protagonist (person or group of people)
- o a beginning, middle and end
- o obstacle(s) the protagonist(s) must deal with
- o implausible/unusual events (vs. "scripted" events (Abelson, 1976) which are largely routinized, "automatic" daily behaviors (Benjamin, 1969)).
- o memorable, repeatable events
- o some moral or point of counsel (Benjamin, 1969)
- o some degree of uncertainty or suspense (Green, 1965).

As an example, below is a story of a palm reader at a swap meet visited by the Odyssey:

Palm reading has been barred because a con artist once told a female client to bury her money in a bag at some location which she did--and she was promptly robbed.

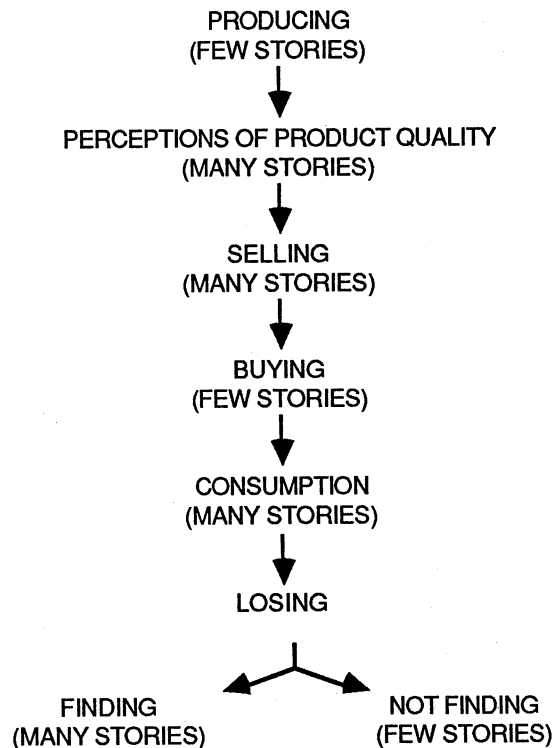
This story, told by a swap meet official, involves a protagonist, a woman, who is duped by a con artist. The sequence of events--read palm, bury money, steal money-- is unusual and has some intrigue and suspense in addition to carrying a clear moral: don't trust palm readers. If consumer stories could be classified in terms of "genres," this might be classified as an "I've-been-at-this-business-a-long-time-and-I-know-who-not-to-trust" story.

Odyssey Stories

The Odyssey interviewing team interviewed over 300 people in urban, suburban and rural settings from Los Angeles to New York City during the summer of 1986. Interviews ranged from 3 hours to casual conversations of 10 to 15 minutes. Topics were largely unstructured, so stories and comments emerged spontaneously, respondents describing themselves, their lives, possessions and anything they were thinking of.

Output is in fieldnote format, and includes over 1000 pages of notes. This output was examined for the type of stories specified above, and over 300 stories were identified. The stories were classified in terms of relevance to production exchange, and consumption issues, and the following breakout emerged:

Figure 1
Frequencies of Types of Stories Told by
Odyssey Informants



Interestingly, there were many stories of product quality (largely by producers), selling, consuming, and losing and finding products. On the other hand, there were comparatively few stories of producing or making products, buying them, or losing and never finding them. Regarding production, perhaps Marx (1961) was correct in saying that production has lost its sense of involvement and fulfillment insofar as there were few stories of interesting things that happened during the making of products, even though many producers and craftsmen were interviewed. Similarly, buying or shopping yielded few interesting stories, suggesting the unpleasant, chore-like activity that shopping has become. That people have few stories about losing and

not finding items is not surprising. Finding a lost item is a pleasant experience and provides a climax to a good story. Losing an item is often painful and there is no ending to the story *per se*.

The next section describes Scholes method of interpreting stories and shows how this method was applied to interpreting Odyssey stories.

A Structural Method for Interpreting Stories

Consumption symbolism has received a lot of attention lately by consumer researchers (Hirschman, 1986; Holbrook & Hirschman, 1982; Belk, 1985). As this field's name suggests, the focus in these researchers' studies is on products and consumption behaviors and what they mean symbolically to consumers.

Structural anthropologists, philosophers, and literary critics, in contrast focus not on elements but rather on relationships between them. These relationships and how they structure key elements is their main concern.

Relationships, for example, include relationships of difference, similarity, contiguity, causality, habitual or cultural association (e.g., "Apple pie" always goes with "motherhood"), and order (e.g., rank order, order of notes in songs, status ordering, etc.). Thus, in interpreting consumer stories Levy suggests that researchers break them into key elements or oppositions, and "structure" them in terms of underlying relationships. In stories about foods, for example, bitter, herbal foods would be contrasted with sweet foods based on an underlying social class dimension, the former more often associated with upscale consumers, the latter, with downscale consumers.

Levy's description of the deconstruction process involves leaving a story essentially "as is" and looking for underlying themes or oppositions. This is perfectly adequate although it often makes it difficult to identify these themes. Recently, Scholes (1985) suggests an alternate method which involves manipulation of the story, and makes it easier to spot interesting relationships, binary oppositions, and themes.

In a nutshell, Scholes suggests three steps in interpreting a story:

1) "Reading," 2) "Interpreting," and 3) "Criticizing." In the reading phase the reader's goal is a full understanding of the scene, of what the writer is trying to describe. Important issues here are the key words and the flow of events. Another issue is how the story might be paraphrased. In brief, how do we construct the scene from the words on the page?

The move to step 2, interpreting, is accomplished by manipulating or altering the story and its elements. Questions here might include: How would the protagonist react in a different situation? What "happens" after the story, for example, what happens to the characters in the movie, "The Graduate," Benjamin, Elaine and Mrs. Robinson *after* the climatic wedding scene? What happens if characters, relationships and symbols are replaced by other characters, relationships and symbols? How do these changes affect themes and meanings inherent in the text? Typically, imagining these types of variations quickly suggests key themes and oppositions.

To consider an example of step 2, consider the movie "Godfather II." This movie begins with scenes of long lines of immigrants at Ellis Island, waiting to enter a country which represents hope and opportunity. Subsequent scenes show mafia gunfights, senators in

whorehouses, thugs and politicians in Batista's Cuba. Had this order been reversed--villains first, immigrants second--the movie's key theme, that of the irony of betrayed hopes and dreams, would not have been as powerful (Scholes, 1982).

The third step, "criticism" involves comparing the story with subjective standards of "taste," that is, is the story and its associated theme "good" or "bad"? Hemingway stories, for example, are typically "masculine" stories, and might be criticized on this basis from a feminist "taste" perspective. Taste, however, does not concern us here, so we focus instead on analyzing consumer stories in terms of steps 1 and 2, reading and interpreting.

Let us consider, as an example, a story told by an informant in a shelter for the homeless in Chicago. The story he tells is of a young (early 20's) black male who often stays in the shelter:

He is doing better from his last injury.
He sells cocaine, and cuts it with baking soda. Periodically he is caught at this and gets beaten up. Most recently he had several ribs broken.

Key words here--that is, words which are necessary to describe the scene or situation-- are "he" (protagonist), "cocaine," "cuts it," "baking soda," and "had ribs broken."

If we replace "had ribs broken" with "had both legs broken," the story begins to suggest interesting themes of equivalencies and product quality. This story is essentially one which compares downscale, black inner city codes with the middle class white codes. Here, cutting cocaine is to getting ribs broken as an airline flight slowdown is to listening to irate air travellers. "Poor product quality" is usually defined in terms of "not meeting expectations," so it is interesting to consider it in terms of feeling-justified-in-harming-sellers. How much harm is too much? If poor service has become endemic in the U.S., does complaining make one feel as if the exchange is more fair? If someone receives poor service, what type of retaliation, if any, is justified? The matter of fact tone of the respondent suggests that the change between poor cocaine and getting ribs broken is fair and equitable.

The next section recounts and analyzes additional consumer stories from the Odyssey and hypotheses and suggests directions for further research.

Analyses of Odyssey Stories

Below are 7 stories from the Odyssey. Each story is presented along with a brief analysis of its key structural components and key themes.

1. Story: "Popcorn on Concorde"

(Indiana popcorn store. Wife tells story of husband/owner's popcorn:)

"His popcorn even flew on the Concorde."

Analysis: Here, popcorn bears the same relationship to the Concorde as Tang did to the space shuttle. This suggests an interesting comparison between the space shuttle and the Concorde. The Concorde does not fly as high nor as fast, is not based on technology that is as exotic, is not as patriotic and can be flown on by anyone with 900 dollars. Yet the

Concorde seems to have replaced the shuttle as a motivational symbol. "Lifestyles of the Rich and Famous" as opposed to science and lunar launches.

2. Story: "Money for Baby"

(An older woman who built up a large swap meet business tells a story of one of her young male employees:)

"The young man asked to leave work early because he had to go to an adoption agency which might have a baby for he and his wife to adopt. They had been waiting a long time for a baby. I said he could leave at 3 pm and that he should pray for it to work out. I also told him that he could promise in his prayers that if it worked out, I would make a donation to St. Jude. At 4 pm he came back with the good news, so I made the donation."

Analysis: Key elements in the story include the baby, the money, the woman and the young man. An interesting relationship here involves the ordering of baby and money. Note that the woman makes the money conditional upon the receipt of the baby. A more sympathetic approach would involve her giving the money *first* in hopes of getting the baby. In effect, she hedges her bets. Also, she puts herself in a much higher, more prominent position in the story and the exchange. Her contribution becomes the climax of the story. As a buyer who pays after delivery, she exercises power in the interchange, just as she exercises power in her swap meet position. What are the status implications of ordering of behaviors in buyer-seller exchanges? Under what conditions do they change?

3. Story: "'57 Chevies"

Said of an older married couple who were automobile buffs:

"They met when they both had '57 Chevies and they took this to be a sign that they were meant for each other."

Analysis: Elements here include the two people and the Chevies. The couple note that the car is a "sign" for them although in a strict semiological sense it is a "symbol" insofar as it shares common properties with them. They are an eccentric couple, and the car is a rather unusual item to collect among car owners. They wanted--and have had-- a long, dependable relationship and marriage, and the car is one of the most dependable ever made. Marriage was a major event in their lives, and the car was a breakthrough for Chevrolet: its first V-8 powered car. Do deeply valued possessions condition expectations regarding life?

4. Story: "Stew"

Older (late 60's) male informant:

"When I was a child we were always able to get by, but sometimes times were tough. Once (in great depression) I remember my father spreading some chicken feed around in the chicken coop.

When it was filled with sparrows, he killed the sparrows. We had stew for dinner."

Analysis: Again, there is a symbolic relationship between elements. Also, an interesting causal relationship, a sort of "consumption chain." Here, during the depression, a weak economic system consumes a weak family which consumes a weak animal. Note that the father did not shoot a bull moose for dinner. Dichter (1964) suggests that men eat steak in order to symbolically partake of the steer's masculinity and power. The question that is raised, therefore, is do people consume items that symbolically reflect their motivations and situation?

5. Story: "High School Reunion"

Mid-aged woman at weight reducing farm:

"I weighed 300 lbs. in high school. I'd eat 4 hoagies a day. I lost the weight (176 pounds) over a period of six months. I went to my high school reunion and nobody recognized me. My hair color got lighter and my complexion cleared up. At the reunion, guys would ask me to dance but I turned them down. I thought, 'You wouldn't ask me on a date, so I'm not going to dance with you now.'"

Analysis: This story sounds uplifting although it bears many similarities to a classical revenge tragedy such as "Hamlet." The woman is harmed by being overweight, then harmed by being rejected in high school. She returns to her high school classmates, and snubs young men who rejected her years before. In a revenge tragedy, the protagonist is done in in the end, so we might anticipate that she will "pay" for her excessive behavior at the reunion. Thus, like many people with weight problems, she might be undone by regaining all the weight. Usually overconsumption leads to some negative consequence. Here, it *is* the consequence.

6. Story: "Letters in the Drawer"

Story told by woman swap market antique dealer:

"Once I found under a dresser drawer some letters from a woman's lover. I figured the timing of the love letters and came to realize that the younger son was fathered by the lover rather than the husband. He was the product of his mother's infidelity. This son was a driven man, a successful lawyer. I realized that he was driven to be successful in order to make himself acceptable to the husband. I figured it was important to let him know about the letters. I went to his house one evening and told him. He was saddened, but thanked me. He was relieved to know why there was always so much tension in his family."

Analysis: An important theme in the Odyssey was the distinction between "sacred" and "profane" items. What makes this story interesting is the sacred nature of the drawer and drawers in general. Obviously, there are different types of sacredness and sacred locations in a house. A mantle in a living room, with its pictures of ancestors and other family members is "sacred" - yet a drawer containing love letters in this case is highly sacred. The former represents a shared sacredness, the latter, a very personal, private sacredness.

7. Story: "Earthquake Pictures of Parents"

"Once (a swap meet vendor) was setting up a display for a show. The display included a fireplace and she wanted some pictures to hang above it. She found a picture in a booth near hers that seemed to match one she already had. One was a picture of a boy and the other was a picture of a girl. Even though they were not exactly the same time period as the rest of the display, there was something right about them together. They were both black and white photographs which had been painted over in oils. Later in the show, a man walked by, looked at the photos and started crying. He said that they were pictures of his grandparents and the pictures had been lost in the San Francisco earthquake. She felt as if these pictures already belonged to him, so she sold them to him at her cost."

Analysis: Again, there is a theme here of unusual equivalencies. The pictures have incalculable value to the man yet the vendor does not give them to him, she *sells* them, albeit "at her cost." We assume, by "abduction," that she is rather mercenary. This is also an interesting story of death sanctioning the value of items, in this case, pictures. Death is a common theme in stories insofar as it gives the storyteller his or her ultimate authority.

Summary

Literary criticism is popular because it enables readers to get more enjoyment from literary works and because it allows them to be creative insofar as they can actively construct interpretations of writers' works. However, a third purpose of criticism—to get at the total meaning of a work—suggests a key value to consumer researchers, namely, that it might be possible to apply critical methods to interpret stories consumers tell about using products. The critical method proposed here (by Scholes, 1985), suggests that stories be analyzed by laying out key story components (characters, events) and then manipulating or changing them in order to identify underlying themes.

An analysis of seven Odyssey stories suggests the following themes and hypotheses:

- o A story about the Concorde suggests that this plane has become a new "supra" aspirational symbol and that materialism and business values have replaced technological values of the 1970's.

- o A story about donating money to the church suggests that the buy now-pay later sequence (as opposed to paying first and then receiving the goods) confers higher status on buyers.
- o A story about 1957 Chevrolets suggests that possessions that are deeply valued shape users' expectations of life in general.
- o A story about a Depression period family eating sparrows suggests that people consume products that bear metaphoric similarities to themselves (similar to Dichter's (1964) hypothesis that real men eat real beef).
- o A story about a young woman who loses a lot of weight and returns to her high school reunion to snub young men who snubbed her earlier suggests that, as in any classical revenge tragedy, she will be "done in" in the end, that overconsumption, once the cause of her problems returns, this time, as an inevitable consequence.
- o A story about love letters in a drawer suggests a conceptual difference between "shared sacred" items (e.g., family heirlooms) and "personal sacred" items.
- o A story about family pictures from the San Francisco earthquake stresses deep meanings of life and death in deeply valued possessions.

This exercise points to the heuristic value of literary analytic methods. An overall theme which emerged in this research, for example, is that of consumption affecting consumption: ownership of '57 Chevies affecting selection of mate, depression "consumption" of poor families affecting family consumption of food types, overconsumption of food affecting underconsumption of dating partners, and so on. This general theme or any of the specific story sub-themes suggest interesting areas for further research.

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**Steps Toward A Psychoanalytic Interpretation of Consumption:
A Meta-Meta-Meta-Analysis of Some Issues Raised By the Consumer Behavior Odyssey**
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Abstract

This paper reports the author's impressions concerning some phenomena in which he himself served as the subject for study so as to raise some methodological issues of importance to the Consumer Behavior Odyssey in general. In other words, it adopts the perspective of an informant and critically re-examines one finding that emerged from the Odyssey in order to suggest the need of an expanded role for the psychoanalytic interpretation of consumption. Specifically, it focuses on the Odyssey's approach to the author's own collection of artistic objects and questions the Odysseans' conclusions concerning the meaning of that collection. It thereby provides an explanation of an interpretation of an explication or what one might call a meta-meta-meta-analysis. All this suggests that the meaning of an informant's possessions may prove opaque to any but the most in-depth modes of observation and interpretation. Besides supporting the Odyssey's use of depth interviews, video tapes, audio recordings, photographs, and other multifaceted modes of data collection, the author's experiences as informant indicate that some latent meanings may lie buried too far beneath the manifest surface to be recoverable by any methods whose scope falls short of long-term psychoanalysis. If so, this paper raises some important questions on where naturalistic inquiry stops and psychoanalysis begins. It suggests the usefulness, in many situations, of moving beyond the relatively surface level of meaning accessible to the ethnographer to explore the psychoanalytic interpretation of consumption.

On a hill high in the Pocono Mountains — two hours' drive from New York — located about five miles southwest of Lord's Valley, Pennsylvania and surrounded by woods filled with deer, raccoons, and even bear who roam amidst the other scattered dwellings, sits a small grey house that my wife Sally and I use for weekend retreats and for brief vacations from the noise and bustle of the Big City (Figure 1, Panels A and B). During the Summer of 1986, this house received visits from two sets of guests. The first was a hoard of insects, rodents, and other arcadian vermin who had taken advantage of our prolonged absence during the preceding Spring to invade our house and to make it their home. The second was a group of my friends from the Consumer Behavior Odyssey.

These two visitations were closely interwoven in both their timing and the meaning that they imparted to my experiences as a consumer, homeowner, and researcher. In late June, about three weeks before the scheduled arrival of my peripatetic colleagues, Sally and I went to the house to get it ready for occupancy by the Odysseans. There, to our horror, we discovered a rampant infestation of household pests that ranged in their degree of ferocity and intimidating potential from simple daddy-longlegs spiders and armies of ants marching across the living-room floor (Panel C) to swarms of angry flying creatures and legions of field mice who had moved inside to keep warm during the cold winter months (Panel D). Feeling somewhat as if we had been struck by all seven plagues simultaneously, I

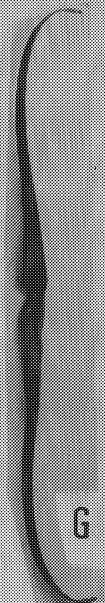
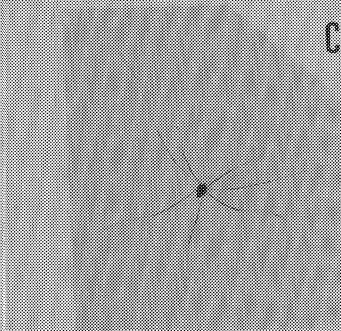
immediately acquired a massive collection of anttraps, mousetraps, bee poison, rat poison, and other murderous pesticides. I stored this potent arsenal in a bookcase near the front door (Panel E) and employed it relentlessly to attack the mobs of intruders that flew, crawled, and crept through the nooks and crannies of our living quarters. I felled whole battalions of worker ants. I pumped an entire can of wasp-and-hornet spray into a nest of vicious yellow jackets. I set a dozen mousetraps every night, sometimes catching as many as eight or nine mice at a time. Eventually, my labors as an exterminator more or less rid the house of pests and prepared it for the advent of a new set of visitors. These thoughts occupied my mind as I sat in the gazebo (Panel B) and awaited the arrival of my friends on the Consumer Behavior Odyssey. My log entry for Tuesday, July 29, clearly reflects the aftermath of my Battle with the Bugs:

On arriving at the house, I unpack the car (which could use a wash and maybe a new coat of paint), put away the groceries (such as they are) and my clothes (what I can fit on my half of the closet shelf), open all the windows (to clear the musty smell that has collected in only a day and a half), spray half a can of bee poison into the now-deserted wasp nest that I stumbled on the other day (with painful results), and perform a superficial rat patrol (finding no mouse signs for the first time in recent memory, probably because we have only missed two nights in the house).

Imagine my surprise when the first thing the Odysseans noticed upon entering our house was my vast assortment of pesticides. Rick Pollay immediately spread out my arsenal on the floor and began photographing it, gleefully announcing that this would serve as a wonderful example for his marketing class (Panel F). Meanwhile, Russ Belk's field notes for August 7 reveal that he, too, was forcefully struck by my assembled implements of death and destruction.

Morris...relates his great mice hunt and ant eradication after not coming up to HF last winter. He also used to date a girl whose father was an NRA member, and he took up target shooting with a .22 caliber rifle that he still has in the house here. He also used to do target shooting with a bow and arrow and tried to shoot squirrels with it. He never hunted, but probably aimed his beebee gun at animals. [See totemic animal discussion in today's journal.] Morris also talks about disposal of mice, their stupidity, and the possibility that they mourn. Earlier discussion indicated that it was mouse droppings that most annoyed Morris. Their dead bodies also horrify him, so he picks them up with tongs and throws them away still in their traps. They are then thrown away in the garbage. Neither Morris nor son Chris ever had rodents as pets. The deer in HF are even seen as pests partly, although they are beautiful. They harbor ticks that carry Old

Figure 1
The Pocono House



Lyme disease that is arthritis-like. Raccoons are pests.

My efforts to explain the need for all the pesticides proved futile. No amount of vivid detail could convince the Odysseans that I had not over-reacted to the pest problem. Even my scariest story about finding a dead mouse in Jeff Durgee's bed won no converts to my point of view. All this left me with a certain sense of frustration reflected in my log entry for Thursday, July 31:

We stop at Nyboff's just before closing at 5:00 to see if the electronic mouse screamers have arrived. Mrs. Nyboff says that the large one has come in for her other customer, but that she has had to backorder the two smaller ones that I had requested. (After all, we would not want to overpower the innocent mice of the field.) My Odyssey friends have found my concerns with pest control to be screamingly funny. This, after I got bitten by wasps from head to foot to protect them against the vicious dangers of the hornets's nest that I discovered only inches away from where they have been parking their van. This, after I have courageously gone on rat patrol after rat patrol, trapping and killing at least 30 or 40 of the nasty little rodents, sometimes up to eight or nine at a time. This, after I have personally laid down enough D-Con to bring the whole animal population of Eastern Pennsylvania to its knees. How innocent my friends seem to be concerning the ins and outs of household pests. I renew my vow to dedicate some research to this topic. If we can study pet consumption, then why not the consumption of household pests?

On the last day of the Odyssey Visit, the time came for me myself to serve as an informant and for Russ and Melanie to take the photographs that have since won our house a featured role in the portion of their videotape that deals with collecting fetishes (which they define as "excessive devotion or attention to an object and/or concept"). My role as informant surfaced on the evening of Thursday, August 7:

While I have some beer and peanuts, Russ and Melanie interview me about the house. Russ has taken some photos earlier while I was still typing. He seems to be working on a theme that has to do with symbolic hunting. Evidence in support of this theme includes the artistic animals scattered around the house, the longbow on the wall, and plentiful supplies of anti-mouse and -ant devices on the bookshelf near the door and in several other all-too-conspicuous corners. I re-explain the household pest problem as best I can. Amazingly, to me, they *still* think I am over-reacting. Maybe I should have just left that dead mouse in Jeff's bed.

As now documented for all to watch on their VCR's, the Odysseans interpreted the contents of our house as revealing as unconscious Morris-As-Great-White-Hunter theme, with the pesticides (Panels E and F) and a longbow (Panel G) proving my murderous intent against members of the animal kingdom large and small and with our collection or art objects serving as

symbolic trophies roughly equivalent at the metaphoric level to an array of moose heads, deer antlers, stuffed owls, and mounted fish. For example, Russ Belk's field notes for August 7 document the artistic contents of the house as follows:

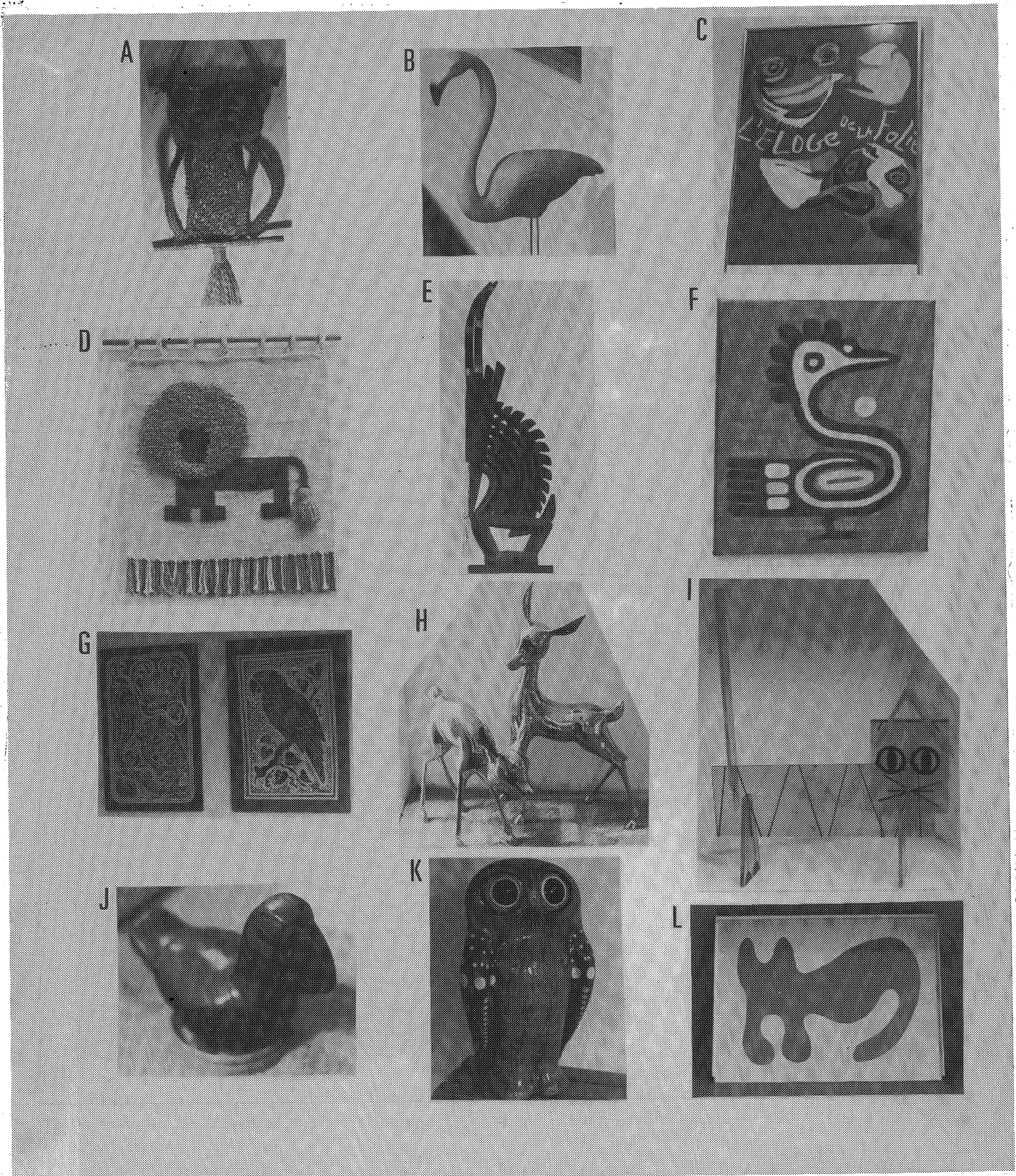
Morris says he collects little except photos, books, music, and stuff that hangs on walls (art).... The decoration includes 2 batiks (see photos of all this) one (hated) of sea horse, turtle, and fish, one of a parrot from Grand Cayman; a pottery parrot from Cozumel, a Mexican bird design rug, a Mexican papier mache brightly painted owl; a pink flamingo recently purchased by mail in response to an ad inviting people to "ruin your neighborhood" (see earlier elitism interpretation); a plastic cat; and African lion wool hanging (the most valuable item in the house over the fireplace, named Toby by son Chris after his favorite basketball player at the time and purchased at a short-lived African shop in New York); an African-looking/wood-looking "antelope" carving (really plaster) purchased in Scranton; and a bow of painted and laminated wood (bought for \$2.50 at a flea market last year). All hang on the wall or sit on the floor of the largest open space (living room rising two floors and dining platform). Asked whether, together with the predominant poisons and traps for ants, mice, and wasps, this portrays Morris symbolically as a great white hunter, he concedes that this may be so.

This interpretation suggested the following excerpt from the script of the Consumer Behavior Odyssey's official videotape (prepared by Russ Belk and Melanie Wallendorf and available from the Marketing Science Institute):

Another fetish we found was first suggested by the decor in this summer home. Everywhere we looked was another artistic representation of an animal, even though the owner claimed never to have intended such a theme. There was also a decorative archery bow, suggesting a hunter prepared to dominate intruding animals. And in all parts of the house and cabinets, we found a potent arsenal of poisons and traps for use against animal or insect intruders whether they walked, flew, or crawled into his territory. Again the owner cited seemingly pragmatic reasons for this arsenal, but the evidence suggested he had made a fetish of gaining dominion over the animal kingdom.

This Belk-Wallendorf focus on fetishism receives considerable support from the collection of artistic objects photographed in our house. Indeed, the interpretation vividly illustrates the potential role of photography in helping to reveal themes and motifs associated with consumption behavior. Thus, in no particular order, one finds representations (Figure 2) of an owl (Panel A), a pink flamingo (Panel B), and two creatures drawn by Appel (Panel C); a lion (Panel D), an antelope (Panel E), and an abstract bird (Panel F); a seahorse, a turtle, a fish, a parrot (Panel G), and some deer (Panel H); a cat (Panel I) and another bird (Panel J); another owl (Panel K) and another cal (Panel L). For me, as an informant, the most remarkable thing about this collection of photographs (which I have subsequently

Figure 2
The Collection of Artistic Objects



recreated in black-and-white) is their revelation of a clear and repetitious theme that was, for me, completely unconscious prior to its discovery by my fellow Odysseans.

In this sense, the example of my own collection of artistic objects attests rather spectacularly to the usefulness of photography as an aid in uncovering the otherwise hidden meanings of symbolic consumption. Thus, for good reason, photography and videotaping serve as valuable tools in the methodological paraphernalia that characterize naturalistic inquiry. Where I might question the powers of naturalistic inquiry, as practiced on the Odyssey, is not in its ability to uncover important consumption-related themes but rather in its ability to interpret what it thus uncovers. Here, I wish merely to suggest that sometimes, though certainly not always, understanding the consumption patterns revealed by field methods may require moving to a deeper level of analysis. Again, I believe that my own collection of art objects serves as a clear example.

For some time, I was disturbed by the interpretation of my art objects as betraying a Great-White-Hunter impulse. Consciously, I harbored nothing but the friendliest feelings toward my artistic animals. At a more deeply buried level, the Morris-As-Hunter interpretation just did not feel right to me. I therefore turned to a more psychoanalytically oriented self-reflective explication of my art collection.

This psychoanalytic self-explication drew upon my own experiences in a five-year Freudian analysis (four times a week on the couch, completed about ten years ago) and resulted in a lengthy paper entitled "The Psychoanalytic Interpretation of Consumer Behavior: *I Am An Animal*" (which currently struggles to survive in what can only be described as a sadomasochistic review process). This paper draws upon four reconstructed childhood memories and a subsequent phobia to suggest what I regard as a more plausible account of the meaning latent in the Pocono art collection.

I shall summarize very briefly. In *Memory One*, recalling an event that occurred when I was about two years old, a collie dog bites me on the cheek. In *Memory Two*, my father returns from World War II to find me thus wounded and gives me a big hug, scratching my other cheek with his rough beard. In *Memory Three*, I climb out of my crib and crawl into bed with my nursemaid, where I feel very cozy and warm. And, in *Memory Four*, I am badly frightened by a phonograph recording of *Peter and the Wolf*.

All this led to a Wolf Phobia in which, at about the age of four, I imagined that, every night, a wolf climbed through the open window into my room where it would bite my head off unless I kept it hidden underneath the covers. In light of Memories One to Four, the Oedipal components of this phobia seem pretty clear. "The wolf" represents my father (clearly associated with the collie episode); "underneath the covers" represents hidden sexual desires (associated with the nursemaid as a surrogate mother figure); "biting my head off" represents castration anxiety (associated with Peter and reflecting unconscious guilt over the repressed wish to kill the father and marry the mother). Thus interpreted, the Wolf Phobia appears to hold a key to the meaning of the artistic objects in our Pennsylvania home.

Briefly, I believe that, at a deeper level of meaning, the artworks serve as a kind of massive resolution of castration anxiety. At least half of them refer to birds (Figure 2, Panels A, B, F, G, J, and K).

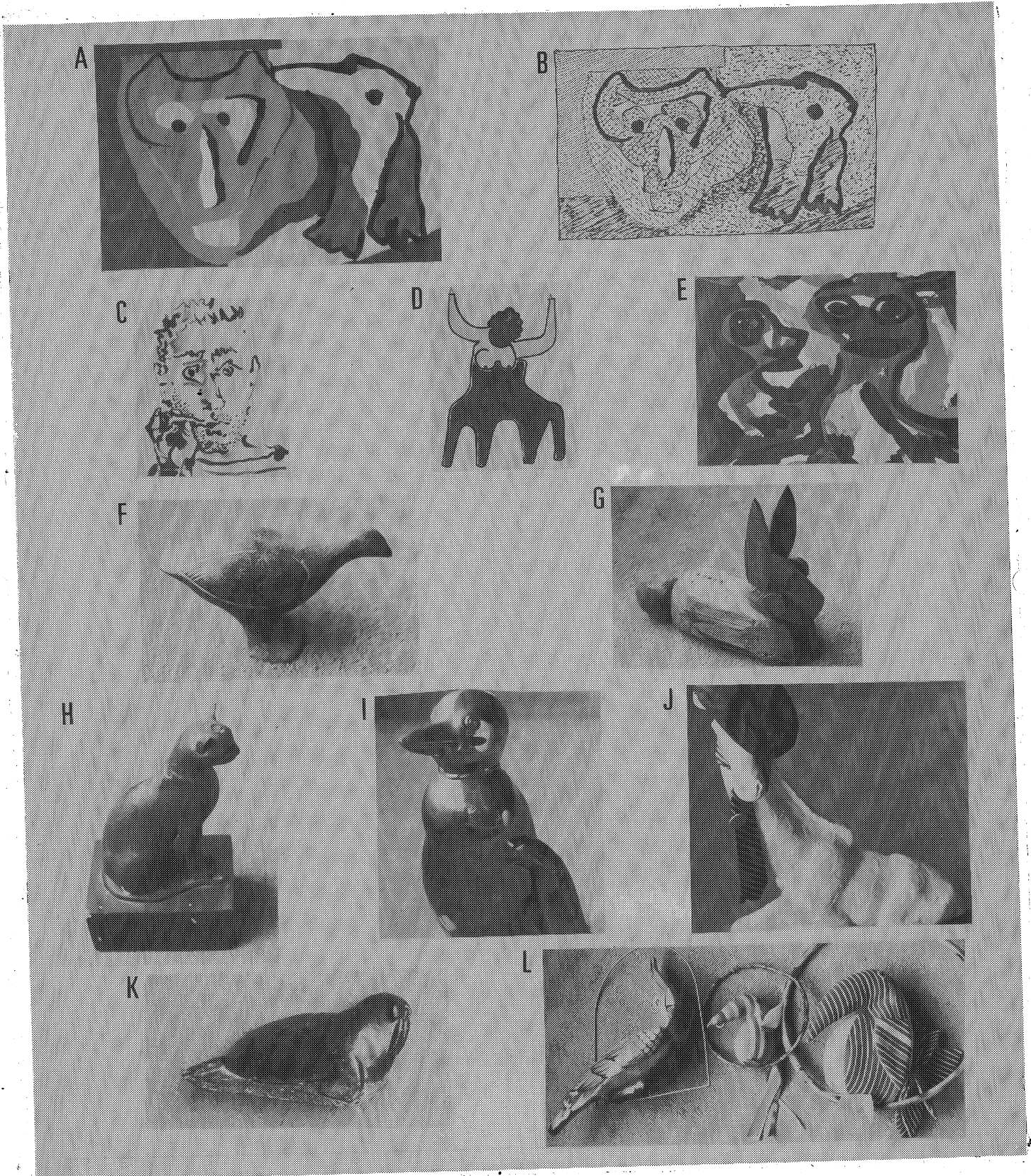
Birds, of course, are characterized by bills, beaks, peckers, and other clear phallic associations. Meanwhile, the other art objects abound in phallic connections such as upright members (Panel I), pubic hair (Panel D), horns (Panel E), and other protuberances (Panel L). In effect, therefore, the Pennsylvania art collection serves symbolically as a sort of sanctuary in which, figuratively, I have given birds and other phallic references metaphoric shelter that protects them from wolves. (Indeed, in this light, both the longbow and the pesticides could be explained as instantiations of the desire to ward off evil intruders.) Moreover, the Pocono collection conspicuously lacks any emblem of a wolf. Apparently, I have successfully banished this most feared creature from the region of my phallic asylum. But this compensatory mental act of vulpine abrogation raises an important question — namely, where has the wolf gone?

In my paper on psychoanalytic interpretation, I try to solve this mystery by suggesting that the wolf has been transformed and moved to New York City (Figure 3) where he resides on the wall of my study in the form of Karel Appel's lithograph entitled *I Am An Animal* (Panel A). I believe that, for me, the meaning of Appel's lithograph lies in its capacity to transform the latent terror of the wolf image into a harmless, colorful, funny, and almost lovable manifest content and thereby to suggest a mastery over the unconscious wishes and fears displaced onto the wolf metaphor (Panel B).

One could ask how I might possibly corroborate such an interpretation. The answer comes from several directions at once. First, my own psychoanalyst has expressed general agreement with my retrospective self-explication and has added some further supportive details. Second, several independent therapists not associated with the original psychoanalysis have indicated that the interpretation makes sense to them. Third, a short story that I wrote in 1976 (appended to the aforementioned paper) shows that, even then, I was preoccupied by the struggle against household pests (as represented by a partly autobiographical infestation of cockroaches). Fourth and most conspicuously, both a psychotherapist friend and Melanie Wallendorf have observed that our New York City apartment dramatically continues the pattern of phallic imagery in such artworks (Figure 3) as Picasso's smoker (Panel C), Man Ray's centaur (Panel D), and Appel's bird-like creatures (Panel E); sculptures of a bird (Panel F) and a rabbit (Panel G); statues of an Egyptian cat (Panel H), a penguin (Panel I), and a giraffe (Panel J); a tusked walrus (Panel K) and no fewer than three brightly colored parrots (Panel L).

In summary and conclusion, I believe that insights drawn from psychoanalytic interpretation can provide rich supplementary explications of the material uncovered by naturalistic inquiry. Through photographs, videotapes, depth interviews, and other field methods, naturalistic inquiry can reveal important themes that permeate consumption experiences. However, the full explication of these themes may require the use of approaches that move beyond the relatively surface level of meaning accessible to the ethnographer to explore the psychoanalytic interpretation of consumption.

Figure 3
The New York Artwork



Market Pitching and The Ethnography of Speaking

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Abstract

The direct sales encounter has rarely been described in anything resembling its full contextual richness. Further, attention to this encounter has been largely confined to the primary retail sector of the economy. In this paper, a perspective drawn from linguistic anthropology is used to examine the persuasive rhetoric of market pitchers as it unfolds in a culturally significant setting. The secondary or informal economic sector is used as the field site.

Performance and the Sales Encounter

While a full-blown sociolinguistic tradition of research into consumer behavior has not yet emerged, increasing attention has been paid to the role of language in consumption. Persuasive rhetoric has been the focus of much traditional consumer research, but the bulk of this interest has been in messages conveyed through mass media or through material culture (e.g., labels). Recently, however, the kind of research into symbolic communication long espoused by Levy (1978, 1981) has accelerated. Semiotic analyses of consumer behavior (Holbrook and Grayson 1986, Mick 1986, Sherry and Camargo 1987, Umiker-Sebeok and Levy 1987) building upon the discontinuous antecedents in the discipline have used language as a tool to unlock the meaning encoded in consumption, and have used consumption itself as a vehicle for interpreting the rich significance of language.

Although such work has explored linguistic dynamics, it has continued to dwell on such "finished" products as advertising (Beeman 1986), rumor (Sherry 1984), or movies (Hirschman 1987). In this article, such products constitute just one component of a larger communicative frame. Elsewhere (Sherry 1980) I have noted a shift from text-orientation to action- and communication-orientation, on the part of theorists concerned with verbal art. Bauman (1975) has identified a cross-disciplinary integrative tradition focused on "performance," which treats the emergent and patterned dimensions of speech. Text, event, and social structure are manipulated through performance. The sales encounter is at once strategic social interaction and verbal art. Thus, construing the market pitch as a performance permits the analyst to gain a deeper understanding of the sales encounter. While a dramaturgical perspective of consumer behavior has occasionally been advocated (Dichter 1975, Leiss, Kline and Jhally 1986, Sherry 1987b), the rich significance of persuasive performance, especially in direct sales encounters, has seldom been plumbed.

Performance in the context of market society is more often experienced than consciously evaluated. Performance has been called the structuring of structure (Kapferer 1986). The performances with which this article is concerned -market pitching- are examples of what Fernandez (1986) has called "revelatory incidents"; that is, tropes are played and images argued by consumers in especially charged moments in human relationships which are pregnant with meaning. Fernandez regards revelatory incidents as primary sources of insight in ethnographic fieldwork. These incidents involve dialogue and colloquialism, and are directly

experienced by the researchers. Through these incidents, we can learn more about the personal, social and cultural significance of phenomena than would otherwise be possible.

Market Pitching As Discourse

Market pitching is a variant of personal selling in which the sales encounter is governed by a *spiel* or a script designed to recruit and enrapture an audience to such a degree that its members are moved to purchase the trader's products. Etymologically, "*spiel*" is related to "*spell*," and it functions as an incantation that induces collaborative expectancy and a willing suspension of disbelief. The conversion from spectator to participant to consumer is accomplished through the pitch.

The pitch is an ancient vehicle of information and impression management, combining didacticism and delight into a powerful rhetorical strategy. Braudel's (1979) description of the Parisienne Halles of the fourteenth through eighteenth centuries is replete with market cries ranging from simple declaration to invective. Such cultural survivals or anachronisms remain entrenched in vehicles like nursery rhymes (e.g., "Hot cross buns"). The patter of contemporary traders such as car salesmen is so familiar (one is tempted to say archetypal) to consumers that advertisers are able to incorporate it in a highly self-conscious, burlesque fashion into mass media messages. "Joe Isuzu" is so credible as the incredible salesman that his pitch reinforces the contradictory print message of the commercial; further, his tag line ("You have my word on it") has been adopted by other commercial reference figures unrelated to the original product. If the market pitch is a hard sell, it is often enough tempered with tropes that both absorb the impact and deflect it to a more congenial realm of the consumer's experience.

In their insightful ethnomethodological analysis of "patter merchanting," Pinch and Clark (1986) investigated several rhetorical formats and selling techniques in the routines of market pitchers in the U.K. and the Netherlands. By exploring the "informal economic reasoning" by which such traders manage consumer preference, these authors show the ways in which "worth" versus "selling price" are contrasted in the constituting of "bargains." A companion piece (Clark and Pinch 1987) that explores compliance techniques and audience response in microsociological perspective demonstrates further the merit of a close reading of discourse recorded *in situ*. The same can be said of Prus' (1985) field study of price-setting activity.

The emergence of discourse analysis (Van Dijk 1985a) as a viable subdiscipline or cross-discipline is a timely one for consumer researchers. In examining language "in use," discourse analysis reveals the multiple links language has with the context of communication and interaction; cognitive and social processes and strategies, and the "contextualization" of discourse itself, become focal concerns (Van Dijk 1985b,1). Existing as it does in the interstices of sociology, sociolinguistics and ethnography (Van Dijk 1985c) these foci of discourse analysis will shift in emphasis depending upon the researcher's orientation. Thus, the one dimension, one method approach of the linguist or

ethnomethodologist (e.g., Corsaro 1985) will differ from the broader, interdisciplinary concerns of the anthropologist (e.g., Hymes 1962). The former approach yields reliable, generalizable results, the latter conceptual richness and theoretical complexity (Van Dijk 1985c). Either approach is useful in consumer research, since language and consumption use-systems are mutually constituting.

In his discussion of language as social practice, Fowler (1985) describes vocabulary as a "lexical map" of the preoccupations of a culture. Consumption, and by extension marketing, is one of our cultural preoccupations (or cultural focus, in Hall's (1959) terms). While our everyday speech is shot full of consumption-ese, this article is concerned most specifically with a "speech event" (Duranti 1985), that is, an interaction defined by speech: market pitching. This event, embedded as it is in the polylogue of the marketplace (Sherry 1987c), is still marked as a distinct register, or as a ceremonial use of language. Argumentation (Kopperschmidt 1985), narrative analysis and conversational storytelling (Gulick and Quasthoff 1985, Polanyi 1985), and rumors and gossip (Fine 1985), are just a few common marketplace speech genres - each of which, in addition to others, can be detected in pitches - that have been explored from a discourse analytic perspective. Predictably, none has used consumption or marketing as a precipitating speech environment. Aside from Woodside's (1984) application of discourse analysis to insurance sales encounters, this approach has not filtered into consumer research.

Ethnography of Speaking

Of the variety of ways of interpreting discourse, the ethnography of speaking is especially useful in probing the significance of market pitching. It is employed in this study in a particular form that is compatible with the researcher's interests. The approach is accorded no interpretive primacy. Rather, it is introduced into the consumer research literature as another item to be added to the methodological toolkit. Its comprehensive scope should prove especially useful in assisting researchers to grasp the complexity of consumption phenomena, and in providing enthusiasts with a framework for inserting parallel approaches on issues from expansion (Labov and Fanshel 1977) to paralinguistics (Birdwhistell 1970, Hall 1959).

The basic tenets of the ethnography of speaking - also called the ethnography of communication - have been elaborated in a number of articles and books. Principal among these is work by Hymes (1962, 1964, 1974), Hymes and Gumperz (1972), and Bauman and Sherzer (1974, 1975). Subsequent work by Duranti (1985) has further enriched the approach. In the interest of enforced concision, the components and processes of this approach detailed below are paraphrased from these sources. Ethnographers of speaking seek to determine the speech codes and repertoires of members of a speech community, including the values, strategies and norms which govern speech production and interpretation (Bauman and Sherzer 1974). These ethnographers focus on a number of basic sociolinguistic concepts: speech communities and events, elements of linguistic structure, repertoires, and codes. Ethnography is the preferred methodological vehicle for such study. Because much language choice is subconscious, and because context critically determines the signalling of social information, fieldwork techniques that elicit and

challenge the verbal skills of speakers are essential (Gumperz 1974). Field immersion and data collection *in situ*, rather than artificial laboratory manipulations, are thus required.

In the development of his descriptive theory of speech behavior, Hymes (1962, 1972, 1974) has proposed the acronym "SPEAKING" as a mnemonic to organize the components that contribute to the complexity of verbal interaction. The eight foci of Hymes' analysis can be briefly reviewed. The *situation* is composed of a setting and a scene. *Participants* may include a speaker/sender, an addressor, a hearer/audience, and an addressee. The *ends* toward which a speech event unfolds are described in terms of purposes: outcomes and goals. The *act* sequence of a performance includes both message form and message content. *Instrumentalities* involved in communication include channels and forms of speech. *Norms* governing communication cover interaction as well as interpretation. Finally, genres of event are the categories to which particular performances can be assigned.

As stated earlier, Hymes' framework can be used for ever greater elaboration of performance; its principal value resides in its comprehensiveness. In the balance of this article, I will employ the framework to interpret two speech events embedded in a local system of consumption. Space limitations preclude an exhaustive treatment of these events, but the analysis serves the programmatic ends of this article.

Methodology

The data employed in this study derive from a larger corpus compiled by the Consumer Behavior Odyssey, an interdisciplinary transcontinental team research project, during the summer of 1986. Both the history and scope of the Odyssey have been detailed elsewhere (Belk 1987, Holbrook 1987, Kassarian 1987, Sherry 1987, Wallendorf 1987). So also have the naturalistic paradigm and attendant data collection techniques that guided the project been meticulously described (Belk, Sherry and Wallendorf 1988; Belk, Wallendorf and Sherry 1987). The entire data set is deposited in an archive at the Marketing Science Institute in Cambridge, Massachusetts, and is available for inspection by consumer researchers.

The data involving market pitching were collected in a number of sites across the country: swap meets, boardwalks, retail outlets, auctions, fairs, revival meetings and assorted tourist attractions. For simplicity's sake, I have elected to focus on a single venue to develop this article. The analysis centers on material gathered at the Rotundan Swap Meet in a suburb of LaBrea, California. Data were collected through participant observation and interview. Embedded collection and induced natural context approaches (Sherry 1984) were employed. Data were recorded in field notes and journals by several researchers, as well as by audio- and videotape and photograph. Since both swap meet venue and naturalistic inquiry methods have been considered at length elsewhere (Belk, Sherry and Wallendorf 1988), no further elaboration of these issues is provided.

The Rotundan Swap Meet itself is an ethnically diverse open air market that is held in a defunct drive-in theatre. It is one of two such markets owned and managed by a local family. Rotundan managers conduct extensive civic positioning in terms of public relations and peace-keeping within the community. Rotundan boasts a 465

vendor capacity, and exhibits a distinctive daily rotation cycle in its product assortment and rental schedule, such that available merchandise and type of consumer varies widely throughout the week. Thousands of consumers may be present on a given day. Musicians, jugglers and other entertainers create a festive atmosphere and help to build traffic. Vendors sell a variety of used and new goods. Traditional retailers also rent booth space at the meet. Thus, a consumer is as likely to encounter a lyrical script and an offer of a "free gift" from a pitchman at a Sears credit application booth as he or she is the harangue of a "bull shit artist" (an emic term for barker or salesperson) moving items from chamois to glassware from Occupied Japan. So also is a range of social classes intermingled, from the upscale bargain hunters of Rosemary Hills to the destitute "scroungers" who scavenge the merchandise jetisonned by vendors at day's end. Rotundan is a fascinating microcosm of the social universe in which it is embedded.

From among the diverse assortment of market pitches occurring at Rotundan, I have chosen two performances for extended consideration. The products in question are functional equivalents: a small, manual vegetable chopping appliance on the order of a Veg-o-matic. The consumer audiences to which the appeals are directed are also comparable, insofar as they are composed of shoppers strolling the same midway. The vendors, however, differ significantly in terms of ethnicity and residence. One of the vendors ("The Miracle Worker") is a middle-aged midwestern white American male who travels market circuits across the United States. The other vendor ("Chop Chop Chop"), a middle-aged Korean male who is a local resident, travels a much more restricted market circuit.

For purposes of discrete, linear exposition, the following sections of this article examine speech events in the sequence proposed in Hymes' model. Because this article was originally presented as a multimedia performance, much of the richness of each speech event is compromised in the reduction, especially as constrained by present page limitations. What follows is an ethnographic overview of materials available to researchers through the Odyssey Archive at MSI.

Speech Event I: The Miracle Worker

The vendor's booth is sandwiched between stalls containing a variety of new and used goods, on a crowded midway of the swap meet. It is a bright summer afternoon, and consumers stroll unhurriedly down the many aisles of the open air market. The vendor's platform is elevated several feet off the ground, permitting him to speak down (literally as well as figuratively) to his audience. His table is filled with vegetables and props. The psychosocial occasion of this performance — its cultural definition — is the "demo." The demonstration is also likened to a "show." If the patter is alleged to be a hard sell, it is tempered at least by strains of amusement and diversion. This exists as one of hundreds of scenes through which consumers move during their site visit.

The vendor himself is a middle-aged Anglo sporting sunglasses and a cowboy hat, in affectation of perceived local canons of dress. The consumer cluster toward which he directs his pitch is composed of Whites, Asians, Hispanics and Blacks. While his principal objective is to sell a \$10.00 vegetable cutter to prospective customers, a number of ancillary objectives are apparent. He uses his pitch to recruit an audience,

literally distracting consumers from the cacophony of the midway, enticing them to focus upon his message. The information and entertainment he provides to his client base are significant components of his ends.

The act sequence of the vendor is arresting. In terms of form, he relies on a rising-then-falling intonation pattern. Among the rhetorical tropes employed most extensively are hyperbole and apostrophe. The content of the message is focussed principally on product attributes, convenience, and economy. The speech modalities invoked impart a special distinction to the message. The pitch is humorous, and the humor is largely of a disparaging or deprecating nature. Consumers are frequently the butt of his humor. The vendor adopts a conspiratorial tone, implicitly and explicitly promising to assist consumers in impression management; in fact, successful deception of significant others is one of the benefit bundles consistently touted. Finally, the vendor delivers his pitch in a perfunctory, detached, methodical manner. The precision and ease promised by the product are echoed in the vendor's pitch, where the cadences are often clinically delivered.

The instrumentalities in evidence are varied. Multiple channels are employed. The pitch itself is delivered on an oral/aural level. The demonstration occurs in a visual channel: vegetables, tools, rinse bowls and assorted props are manipulated to communicative ends. A signboard behind the vendor's table serves to display his product's name, and functions as a dart board of sorts that permits the vendor to toss vegetables sliced "as thin as poker chips" up on permanent display. The pitch is delivered in standard midwestern American English, with no code- or register-switching during the performance.

The behaviors and proprieties attached to speaking, and issues surrounding decoding are fairly transparent in the vendor's pitch. Although following a practiced script, sufficient allowance is made for extemporizing. For example, the vendor engages consumers (individually, or as a rhetorical collective) in banter and in ridicule throughout his pitch. He also commits several intentional "mistakes" in his presentation, using self-effacing remarks to bond his prospects more tightly to him. While implicit expectations of all actors call for an uninterrupted performance, punctuated interruption is in fact the norm. Some heckling and cross-talk emerges from the audience, with *sotto voce* argumentation and post-hoc criticism being common occurrences. Notions of turn-taking in conversational interaction prevail overall. Because the vendor is not a regional native, and because he travels a transcontinental market circuit, he employs a generic or functional language devoid of local resonance. Popular cultural references (for example, to soap operas) are as specialized a use of language as the vendor permits himself.

Of the speech genres employed by the vendor, the pitch is the predominant or overarching category. However a number of other subgenres combine to give his pitch its distinguishing characteristics. Principal among these subgenres is the joke, and principal among joke themes is the disparaging of the consumer as buyer. If joking is construed as ritual behavior (Sherry 1980), then the topics of the vendor's jokes can be used as indices of social stress upon which his product is positioned to have primary impact. Role expectations, time pressures, kith and kin relations and consumption skill are a few of the topics of his joking interactions.

Extensive reliance upon comparative advertising makes it clear that formal comparison is an important subgenre of pitch composition. Finally, proverbs and proverbial expressions are important units of pitch composition. Comparison and admonition modulated through humor is a fair characterization of the vendor's genre development.

Speech Event II: Chop Chop Chop

While this vendor's booth is also sandwiched between the stalls of other vendors on a similarly crowded midway, it differs in several respects from the one previously described. This booth is set up entirely at ground level, with the vendor's table being the only barrier between him and his prospective customers. In this sense, he is on equal footing with his prospects. The vendor has erected an awning over his table. This canopy provides shade for him and a number of consumers who have surrounded his stall. His performance unfolds literally in the round, unlike the proscenium based performance of his competitor. The cultural definition of the speech event is identical to the one just described: "demo" couched as "show."

The vendor in the present event is a middle-aged Korean male. He is dressed in a casual westcoast style, but as will become clear, his apparel is more semiotically significant than that of his competitor. The consumer cluster he has recruited is quite similar to that of his competitor, with the exception of a greater proportion of blacks. In terms of ends, the goals and outcomes of the Korean vendor are similar to his Anglo counterpart, with one significant exception: the Korean vendor closes more sales. Whether this is attributable to price, performance or some permutation remains to be considered.

The act sequence of the Korean vendor is every bit as arresting as that of his Anglo counterpart. The form of speech preferred by this vendor is a staccato shout, modulated intermittently by a chant. The pitch is a hybrid of soliloquy and stichomythia, with the rhetorical question forming the basis of what is essentially a lecture. Message content centers on product attributes, but in contrast to the competition, focuses as well on issues of health and utility. These are important positioning differences that arise from the vendor's cultural values system and his reading of American lifeways, as much as from business strategy.

The "key" component of this speech event differs markedly from the first. The Korean vendor is very serious in demeanor, and his performance is quite painstaking. He has a vigorous, animated style, conducting his demo with a flourish. His language becomes part of the slicing, dicing, cutting procedure he demonstrates, the words and cadences of his patter as much a cutting instrument as the implement itself. His style is quite personalized, despite the fixity of the script. Perhaps the best way to characterize the modality of his pitch is to call it ingratiating. The vendor bonds his audience with the gift of his performance. He is as eager to perform well as he is to close the sale.

Instrumentalities evident in the second pitch are quite distinct as well. Again, the pitch itself is delivered on oral and aural levels. Visually, however, this speech event is far more evocative than its counterpart. While the same demonstration props are evident (albeit manipulated more dexterously), additional props are employed to create a hotter semiotic environment. The vendor wears a roll-up cap to which is attached a button which proclaims "I love Chop Chop Chop." This same

logo is emblazoned in larger letters across his T-shirt. Framed newspaper clippings attesting to the vendor's local celebrity are attached to the awning struts of his stall. Consumers familiar with his performance through local mass media or from having seen it in other open air markets refer to the vendor himself as "Chop Chop." Speech forms themselves are also distinct from those present in the pitch described earlier. The Korean vendor's heavily accented American English is both a tactical and unintentional source of much of the humor of the pitch. The incongruity (some of it staged, as befits proper showmanship) of the persona and the accent gives the performance much of its power. The colloquial use of American English (the pitch is replete with idiomatic expressions such as "looking good!" and "I gotta go") contributes to this effect. Furthermore, the Korean vendor is adept at code switching, delivering parts of his pitch in English, Spanish and Chinese; relevant targets are acknowledged and complimented, while the audience as a whole is delighted.

Interaction and interpretation norms are also sufficiently different from the first pitch as to warrant comment. The Korean vendor's script is rigid and permits no extemporizing or adhoc interplay with the audience. An uninterrupted performance is expected and delivered. No heckling occurs during the pitch, and the cross-talk among the audience is entirely supportive. Calls of "Yeah Chop Chop!" or "Go Chop Chop!" are common. In fact, the presence of a larger coterie of black consumers produces an interesting synergy with the vendor's presentation style. One black consumer begins an antiphonal, overlapping call and response-type commentary in support of the pitch, much like the speech form that would be expected during a liturgical service. Because the vendor is a "local" (despite or because of his ethnicity) he is able to use language strategically to target his prospective customers in a way that the non-native vendor does not. Such effective linguistic targeting may contribute to the vendor's successful closing rate.

Finally, the genre of this second speech event is still the pitch, but the subgenres undergirding it differ noticeably from the first. The Korean vendor's pitch is primarily a lecture, peppered with colloquial expressions. While joking occurs, it is less formal than that of the counterpart pitch, and consumers, when criticized, are disparaged for their dietary patterns rather than their shopping acumen. The length of the pitch is half that of Anglo vendor's; the Korean vendor's performance is more stylized and yet less rhetorically elaborate than that of his competitor.

A Note on Dramatic Shape

Space limitations prompt a reductionist interpretive summary at this juncture. In one speech event, a non-native (i.e., non-local) vendor delivers a lengthy, rhetorically elaborate, precise but interactive, humorous pitch for an implement positioned as an economical and convenient labor saving tool. In a second speech event, a native (i.e., local) vendor delivers a shorter, tightly scripted, paralinguistically elaborate, impassioned and strategically incongruous pitch for a product positioned as a quasi-medical instrument. The former is a distanced exhortation to buy; the latter is an animated lecture encouraging purchase. The Anglo vendor makes relatively few sales of his (relatively expensive) product compared to those of his competitor. In each

Table 1
Dramatic Structure of Speech Events

Element	Vendor	
	The Miracle Worker	Chop Chop Chop
Initiation	Recruit audience	Recruit audience
Rising Action	5 (Demo joke comp)	3 (Am deficit remedial lect) 3 (Serial demo prod benefits) (Am deficit)
Climax	2 (Price gift joke focus)	(Price gift price)
Denouement	(Gift price reduc exhort)	
Close	(Gift joke)	(Price increase)
Conclusion	Disperse audience	Release audience
Result	Single Purchase	Multiple purchase

case, the audience has received an intangible gift which will ostensibly pay dividends for the vendor-performer.

The dramatic shape of these speech events remains to be considered. This dramatic shape I take to be the ritual substratum of the pitch. Based upon an analysis of transcripts (verbatim are not provided due to space limitation), the structures indicated in Table 1 emerge. Clearly, ritual beginnings and endings, formulaic repetition, and progressive movement are apparent at the fundamental level of the market pitch.

The Anglo vendor relies heavily on repetitive jokes and comparisons to other products, services and companies to build audience involvement. The Korean vendor prefers to reveal American problems, offer solutions, and repeatedly extol product benefits while conducting his demonstration to engage his prospects. In each case, the pitch climaxes with the announcement of price and the offer of an incentive gift. The Anglo vendor uses the gift as a stimulus to additional pitchwork, while the Korean vendor simply rests his case. The pricing strategy employed by each dealer is instructive. Whereas the Anglo dealer announces a price reduction and a doubling of his incentive, the Korean vendor actually raises his price marginally to compensate himself for the show. The former vendor literally disperses his audience, actually antagonizing some of the mere "lookers." The latter vendor releases his audience, which presumably has become enthralled, and thanks consumers for "watching" his "show." Note the lack of a falling action in the Korean vendor's pitch. His close comes abruptly after the climax, while his competitor returns consumers more gradually to the other delights and temptations of the midway.

As a primarily descriptive exercise, this article makes no attempt to frame generalizable propositions about market pitching efficacy. Rather, the data contained in this article are presented as baseline ethnography against which future studies of pitching may be positioned. Within space limitations imposed by proceedings, I have tried to illustrate the utility of a thick description of consumption phenomena. Clearly, much additional detailed work is required before our understanding of market pitching can become comprehensive.

Conclusion

In this article I have attempted to accomplish two objectives. First of all, I have drawn attention to a curiously neglected commercial art form every bit as fascinating as its mass media analogs: the market pitch. Secondly, I have used patter merchanting as a vehicle for introducing into the consumer research literature a

comprehensive framework for the interpretation of buyer and seller communication: the ethnography of speaking. The use of naturalistic inquiry methodology and the choice of a venue with significant ethnic diversity contributed further to the programmatic goals of this article. The rise of informal retailing, the increasing significance of direct marketing, the accelerating fragmentation of the domestic mass market and a number of other consumption trends make it clear that researchers must return their attention to fundamental market mechanisms if our understanding of consumer behavior is to deepen appreciably. The pitch and the open-air market are two such fundamental mechanisms.

The long term prospects of an ethnographic approach to commercial speech events are theoretically and practically significant. Comparative analysis of thickly described sales encounters — captured in multiple media that preserve contextual and paralinguistic features of performance — will permit more comprehensive modelling of the sales encounter. The effectiveness of the pitch can be evaluated by factors other than mere price manipulation, such as rhetorical virtuosity, information disclosure, or even social class. Conceivably, even more effective promotional patois might be generated through such analysis. Perhaps the most significant contribution of a detailed investigation of patter merchanting would be the impact outside the discipline of consumer research itself. The study of a consumption phenomenon as an extraeconomic event — an art form, a performance, etc. — would be of value to scholars in folklore, anthropology, sociology, communication, and marketing.

[References available from author]

Collectors and Collecting
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Abstract

By one estimate, one out of every three Americans collects something (O'Brien 1981). Collecting is a common, intensely involving form of consumption. Yet it has been the subject of almost no prior work in the field of consumer research. This paper defines collecting and presents some initial findings from qualitative research on collectors. Propositions are derived for further investigation concerning the appeal and nature of collecting in contemporary American society.

Acquiring, Possessing, Hoarding, and Collecting

Distinctions are necessary between collecting and several related, but distinct consumption processes, including accumulation, possession, and hoarding. We reject, for example, the suggestion that collections are necessarily intentional (Duroust 1932) or must involve series-completion (Rigby and Rigby 1949), but accept these as characteristics of some important types of collections. Kron (1983) suggests that collectors are more *selective* (and classificatory) than indiscriminate accumulators. Belk (1982), Kron (1983) and Danet and Katriel (1986) all specify that collecting involves acquiring an *interrelated set* of possessions. Duroust (1932) specifies that objects (or ideas) in a collection must be valued for more than their utilitarian or even their aesthetic qualities. While items collected may have utilitarian or aesthetic appeals, they must have additional significance to the collector due to their *importance in contributing to the "set"* of items that comprise the collection. Although both coin collectors and misers accumulate money, the criterion of selectivity suggests that the miser is not a collector because he/she views money as a commodity (Simmel 1971/orig. 1907). We would further suggest that collected items take on a *non-utilitarian "sacred" status*, as discussed below.

Items in a collection, as we construe it, may be *material objects, ideas, or experiences* (e.g., travel, restaurant, or concert experiences, either with or without tangible manifestations of these experiences). For the sake of brevity we will not focus on the possession-related activities of caring for, cataloging, or displaying a collection. These we label the curatorial aspects of collecting and differ from the acquisitive aspects of collecting per se. This distinguishes the collector from the possessor of a collection assembled by someone else (although the acquirer of several such previously assembled collections would be a collector of these collections). A similar distinction might be drawn between two types of non-collectors: the accumulator (who is acquisitive, but lacks selectivity) and the hoarder (who is possessive, but views the items possessed--e.g., food, toilet paper; McKinnon, Smith, and Hunt 1985--primarily as utilitarian commodities rather than extra-utilitarian sacred items). The acquisitive activities of both collectors and hoarders can become *obsessive and compulsive* (Jensen 1963). Indeed at least some degree

of obsession is required to distinguish the hoarder and the collector from the mere possessor of items.

Methods

Our insights about collecting derive from data collected by the Consumer Behavior Odyssey. Since the data collection and analysis methods from this project have been described elsewhere (Wallendorf and Belk 1987, Wallendorf, Belk, Heisley, and O'Guinn forthcoming, Belk forthcoming), they will not be described here other than to say that the Odyssey was a transcontinental interdisciplinary research project undertaken in the summer of 1986 by a team of researchers from 15 universities in the United States and Canada (Belk 1987a; Holbrook 1987b; Kassarian 1987; Sherry 1987; Wallendorf 1987). The project employed a naturalistic paradigm (Lincoln and Guba 1985) to explore consumption phenomena in accord with Tucker's (1967) seminal call for open-ended investigation of fundamental consumer behaviors.

It should be noted however, that the focus on collecting behavior in this project was not sustained enough to allow a complete development and testing of a theory of collecting based solely on these data. Therefore, the following discussion describes tentative propositions that are warranted based on these data. This preliminary work both contradicts and elaborates upon the existing literature on collecting.

Propositions About Collecting

1. Collections Seldom Begin Purposefully

Contrary to traditional wisdom, our findings and those of Johnston and Beddow (1986) indicate that collections of a particular type of item often begin with an incidental or accidental start. Rigby and Rigby suggest that "Perhaps the average collector chooses his given subject in much the same way that people find friends and mates among those individuals whom chance has included into their small orbit" (Rigby and Rigby 1949, p. 341). They further recognize that collections can and often do begin without conscious intent (p. 398). For many, a gift (Lee 1984, Leerburger 1986) or a seemingly serendipitous discovery of some item (Schwarz 1984) starts a collection. A survey of 215 collectors also found that for many, fascination with a single item that had been acquired led to a quest to acquire similar items (Treas and Brannen 1976). This desire to find replicable material pleasures is consistent with our interpretation of collecting as a materialistic activity.

In a sense, many collections are "discovered" by their creators long after the materials have been gathered. Among our informants, one had amassed a number of paintings, wall hangings and other artifacts representing animals (see Holbrook forthcoming). This "collection" did not register as such in his consciousness, but was rendered apparent upon reflection.

In some instances a collector began with inherited "seed" objects or an intact "starter" collection that

primed the adoption of a collector role. For instance one informant had received such a "starter" set of Christmas plates.

Gifts may act as a seed around which collections accrete. One informant, nicknamed "Bunny," received rabbit replicas as gifts from her friends, and purchased others for herself. Another informant traced his collecting behavior, which developed into a museum and gift shop, to a wedding gift given to him by a relative. Other informants reported receiving "collectibles" as gifts and subsequently embarking on quests to complete the collection.

The origins of hoards, as distinct from collections, were quite different. They existed less as discretely bounded, thematically unified wholes than as caches or eclectic assortments, and typically arose from accumulation by consumers who experienced traumatic deprivations, such as the loss of family networks or the weathering of the Great Depression. In some cases, these hoards were shared with others under the rubric of "good neighborliness." One elderly informant had assembled several garages full of assorted utilitarian objects such as hardware, furniture and the like, which he dispensed to neighbors. Collectors are also unlikely to be as altruistic.

2. Addiction and Compulsive Aspects Pervade Collecting

Collecting is often likened by the collector, and perhaps more frequently by his or her family and friends, to an addiction, while search behavior is frequently described as both an obsession and a compulsion. Both our interviews and others' examinations of collecting have suggested that collecting is addictive (e.g., Kron 1983, Johnston and Beddow 1986, Danet and Katriel 1986, Rigby and Rigby 1949, Olmsted 1987, Meyer 1973, Brady 1975, Holbrook 1987a, Brough 1963). Despite their incidental start, many collections are seen as becoming an addictive activity in which adding items to the collection constitutes a "fix". As with other addictions, the object of the addiction is relatively unimportant; it could be almost anything and acts only as the focus of release from other fears or feelings of inadequacy (Delattre 1986). While it might be debated whether avid collectors can be considered to be clinically addicted, the fact that collectors themselves admit to being addicted is telling, for, as described by Peele (1985), addiction is by no means a positive condition. He suggests that insecurity prompts the addicted individual to seek reassurance through a repeated ritualized activity. While feelings of well-being may increase as a result, the addict's other interests narrow until they focus solely on the external object of the addiction. The fact that many collectors readily admit to being addicted indicates the power of the attraction or of the social sanction bestowed upon compulsive activity when it is legitimized with the label "collecting". Association with other compulsive collectors further supports this feeling of positive addiction (Glasser 1976).

The altered states of consciousness produced through the collector's search and acquisition are commonly described as mood swings resembling the euphoria and depression induced by chemicals. Collectors frequently experience a holistic, autotelic sensation described as "flow" (Csikszentmihalyi 1975). The search process is clearly a thrill-seeking experience for many collectors, which may engender distress as well as eustress. Collectors often report feeling both a craving

and a loss of control with respect to their acquisition habits, and occasionally experience negative consequences in other spheres of their personal and social activity as a result of their chronic collecting. The coincidence of collecting and chemical dependency, or the incidence of symptom substitution or displacement (from chemicals to collectibles) is sufficiently high as to warrant extended investigation. While many collectors belong to voluntary associations connected with their particular pattern (e.g., the Midwest Association of License Plate Collectors), many also lament the lack of self-help groups designed to arrest compulsive collecting. Some collectors forestall completing collections for fear of the withdrawal symptoms. As might be expected, "dual or poly dependencies" commonly occur, with a collector diversifying into a number of collectibles. So also is intergenerational transfer of collecting (although perhaps not of the same collectible) a commonplace occurrence.

One informant in particular embodied the interplay of stresses of compulsive collecting. A recovering polydrug abuser, he described his current collecting behavior as an addiction. He has accumulated a large collection of Mickey Mouse memorabilia, and often obtained his "Mickey fix" (an emic term) in lieu of paying rent or meeting other financial obligations. The thrill of collecting and displaying these objects eventually threatened his well being, so he stopped collecting "cold turkey" (again an emic term).

3. Collection Legitimizes Acquisitiveness as Art or Science

For the collector (and perhaps the hoarder to a lesser degree), the recognition of the collection by others as being "worthwhile" legitimizes what is otherwise seen as abnormal acquisitiveness. This can give the collector not only a sense of purpose (e.g., Goldberg and Lewis 1978), but a sense of *noble* purpose in supposedly generating knowledge, preserving fragile art, or providing those who see it with a richer sense of history. Having one's collection accepted into a museum collection or in some instances even having it *become* a museum is the ultimate in legitimization of the activity (e.g., Hughes 1987, Pollay 1987). Having items *like* those that one collects appear in a museum is a less direct means of legitimizing one's collecting activities (Meyer 1979).

The distinction between art and science in collecting seems to appear in the two (pure) types of collectors detected by Danet and Katriel (1986). Their "Type A" collector employs affective criteria to choose items for the collection. Such collectors try to improve their collections, but have no sense of a series needing completion. The "Type B" collector uses cognitive criteria to choose items that add to a series and help improve their knowledge rather than the beauty of the collection. We agree that these two types, while sometimes mixed, represent the two distinct approaches of art and science as ways of legitimizing a collection (Belk 1986). In either case, a halo effect of sorts occurs, such that search and acquisition are ennobled through association with the collection itself. In turn, the effort invested in search and acquisition further legitimizes the collection. This effort raises these activities in the eyes of the collector to the level of art, if not science. Collecting is not mere stockpiling or warehousing, mere acquisition, or sheer accumulation. Collectors exhibit a variant of the "commercial libido" that Malinowski

attributed to Zapotec merchants (Malinowski and Fuente 1982). The ardor and passion driving search behavior is nurtured by a sense of purpose and worth.

4. Profane to Sacred Conversions Occur When an Item Enters a Collection

This legitimization and sanctioning of acquisitiveness is related to another phenomenon that occurs in collecting—the transformation of ordinary profane commodities into sacred icons. The terms sacred and profane are not used here in a vernacular religious sense. Instead profane is taken to mean mundane, ordinary, and common, while sacred is taken to be extraordinary, special, and capable of generating reverence (see Belk, Wallendorf, and Sherry 1987). Collectors "singularize" (Kopytoff 1986) items enshrined in collections when they remove an item from the secular, profane, undifferentiated realm of the commodity, and ritually transform it into a personally and socially significant object. The sacralized item becomes a vehicle of transcendent experience which exceeds its utilitarian and aesthetic endowment.

Sacred conversions are accomplished in a number of ways. The sheer bringing together of items under the rubric of "collection" is the most basic transformation. By metonymic association, the sacrality of each item is enhanced. The container (whether it be envelope, box, or room) chosen to house the collection defines a sacred space. Conventions for handling the collection and schedules for interacting with it provide the ritual grounding for maintaining its sacredness. As Kopytoff (1986) notes, the function of the collection in sacralizing formerly ordinary objects is aided by these objects being removed from the sphere of commodity exchange and also from their ordinary utilitarian roles. Thus collected automobiles or furniture must be sufficiently old that they are not merely seen as "used" rather than rare antiques. Informants who were collectors of automobiles, if they drove these cars at all, drove them sparingly and for special occasions because they were regarded as primarily non-utilitarian icons. Coins that are no longer circulated gain some rarity by this status, but also make it clear that they lack utilitarian properties. Hoarding items merely for their investment value is not collecting because it invokes a utilitarian reason for the accumulation.

Another means of sacralizing a collectible object is by its having been "contaminated" (in a positive sense) by contact with prominent persons. One antique collecting informant treasured a music box that had once belonged to Winston Churchill. Other objects were seen by their collectors as contaminated with sacredness by connection to actors or to the collector's ancestors. An item can also gain sacred significance by having been a part of a famous collector's collection. Thus collectors may refer to a Walferdin Boucher, a Weil-Picard Fragonard, or a Gangnat Renoir (Rheims 1961). For this reason, an auction house such as Sotheby Parke Bernet or Christie's carefully explains the price-inflating provenance of an item for sale when it has a famous history. This contamination of property is also why collections are devalued and desacralized by the discovery of a forged work (Belk 1987c). If the utilitarian or aesthetic qualities of the item were paramount, the forgery would not matter. But because a collection depends instead upon other qualities for its sacredness, the forgery loses its value for the collection upon

discovery (unless it enters a new type of collection where it is esteemed for its curiosity value).

Informants provided the strongest evidence of the sacredness of their collectibles when asked about the salability of the items. Except to upgrade, there was no consideration of this possibility. The Mickey Mouse collector, an elephant figure collector, and an antique bronze collector all had businesses in their areas of specialization. Nevertheless, once an item entered their private collections, it would never be considered saleable. They said this would be unthinkable and would clearly be "wrong".

5. Collections Serve as Extensions of Self

Our self definition is often highly dependent upon our possessions (Belk 1987b). The collection is especially implicated in the extended self because it is often visible and undeniably represents the collector's judgments and taste (Stewart 1984). In addition, the time and effort spent in assembling a collection means that the collector has literally put a part of self into the collection. Sometimes collections involve a particular theme that is symbolic of one's occupation, family heritage, or appearance (e.g., Fusco 1984, Lee 1984). Data from which this proposition is drawn include a grocery store owner's collection of antique consumer product packages, an advertising historian's collection of advertising artifacts, an amateur musician's collection of the recordings of musicians he admires, an engineer's collection of pocketwatches, and even the efforts of our research team in spending the summer travelling across country to amass our collection of data.

Because collections are seen as extensions of self, to lose one's collection is to experience a diminished sense of self. Because of this connection to self definition, collections have been seen as aiding in children's development (e.g., Witty 1931, Tooley 1978). In the sense that nations are also collectors of art and artifacts, concern with loss of national pride results in efforts to repatriate such objects when they are in the hands of other nations and to prevent further loss of national heritage in this way (Venables 1984). The deep sense of loss experienced when a collection is accidentally destroyed was highlighted by the destruction of one informant's lifelong record album collection in a flood. He too, felt destroyed by the flood, as if it had taken a part of him.

The notion that collections represent one's extended self accounts for many of the self-enhancing motives given for collecting, such as seeking power, knowledge, reminders of one's childhood, prestige, mastery, and control. Data on a wealthy female informant's collection of monogrammed silver spoons inherited from her husband's mother indicates that it served as a mnemonic device conveying the importance of family name (through the monogram), wealth, and social position. Several informants who saw themselves as cosmopolitan collected intangible travel experiences which some tangibilized with collections of t-shirts or glassware from each place visited.

Collections are used not only to express aspects of one's direct experiences; they are also used to express fantasies about the self. This proposition is based on data illustrated by a baseball card collector (himself a middle aged man) who thinks middle aged men collect baseball cards "to keep alive their fantasies of being ball players." Since these fantasy aspects of the self aren't lived on an everyday basis, they are experienced through

the collection, as was true for a fire buff (he enjoys watching fires and firefighting) who collects fire department items. The collector of Mickey Mouse items collects them because he is "an overgrown kid." The housewife nicknamed Bunny collects bunny replicas partly because she thinks her teeth make her look like a bunny and partly because, as she half-jokingly mused, people think she looks like a "Playboy" bunny.

Other collectors expressed even grander fantasies which are poignant in their underlying expression of self-doubt. The collector of elephant replicas, a man fond of showmanship, fantasized about adding a live elephant to the collection to attract the publicity he craves. Similarly, an overweight 8 year old boy with a prominent scar indicated that he collects swords in order to "make me equal to the other kids" when they play duel with each other. A 6 year old girl entered in a beauty pageant wanted to collect pins from pageants to put on her sash because they would make her feel pretty.

Organized groups of collectors, such as the networks of elephant replica and Mickey Mouse collectors, support their mutual identity not only by trading with each other, but also delighting in showing their new acquisitions to each other. Only in such groups does a collector find knowledgeable others with sufficient understanding to feel appreciative and envious of the collector's acquisitions.

Just as a personal collection serves to shape the self-definition of a collector, so do museum collections serve to define the identity of a region or historical period. As with personal collections, a part of this identity is grounded in reality, and a part in fantasy and myth. This extension of the proposition was derived from instances like a museum of pioneer farm life in the midwest which attempted to create a regional identity by displaying such household items as Limoges china, ornate parlor tables, pianos, and sideboards, china cupboards with leaded glass fronts, and lace dresses. Such items may have been found in the town banker's house, but are certainly not representative of the area lifestyle at the turn of the century. Yet, through the collection, a nostalgic image of life is constructed as the identity of the region's past.

6. Collections Tend Toward Specialization

While collections may begin broadly, there has been a trend toward specialization in the West since the eighteenth century (Defert 1982, von Holst 1967, Wittlin 1970, Impey and Macgregor 1985, Praz 1964, Hodgen 1964). This has helped the collector define a more manageable collecting task and narrow the competition so one's chances of being unique are improved (Rochberg-Halton 1986).

One informant was proud that she had all of the "retired" (no longer in production) Precious Moments figurines, but would not consider purchasing any of the current figurines. Such increasing specialization was commonly mentioned, as with the elephant replica collector. He indicated that at that time he was seeking only the rare advertising pieces; he had recently purchased an entire collection of 500 elephant replicas in order to obtain the 20 in which he was interested. A jazz collector said he likes the music of only about 20 musicians, and has mainly their albums. The collector of Mickey Mouse items focused only on replicas produced during a certain time period. He indicated that he knows some collectors who specialize only in either authorized or non-authorized Disney toys. Such specialization

produces expert consumers with greater knowledge than sellers, an unusual market phenomenon. It is perhaps appropriate to note that the researchers, as data collectors, evinced a similar tendency. As emergent design unfolds, the specification of appropriate sampling units becomes more focused in order to challenge developing ideas.

7. Post-Mortem Distribution Problems are Significant to Collectors and Their Families

If collections are extensions of self, keeping one's collection intact may be a way to gain a sort of immortality (Rigby and Rigby 1949). Having lived to such a degree through the collection (e.g. definition of self, fulfillment of fantasy, development of a sense of mastery, construction of meaning and purpose in life), the collector's desire for immortality through the collection is not surprising. Another reason that collectors are concerned with the fate of their collection involves its perceived sacred status. They fear that it might fall into the hands of someone who would profane it by failing to appreciate it and care for it properly (Rheims 1961, Johnston and Beddow 1986, von Holst 1967). Some collectors have disinherited their children, finding them to be unworthy of their collections (Cabanne 1961).

In the data there is a tendency with age for both the collector and his or her family to begin to be concerned with post-mortem disposition. However, as with death, it is difficult for them to talk with each other about these concerns. Cultivating an heir is one solution, but quite often other family members are not interested (Olmsted 1987). Where a family member has some interest, there may be a substantial "education" that must be imparted so the inheritor can fully appreciate the meaning of items in the collection (McCracken 1987). Again, the analysis turns to the collector of elephant replicas who said he plans to leave the entire collection to his granddaughter, although she was only a year old. He has already given her several elephant toys (he says he is making a point of it) as well as an elephant print dress. He will not leave the collection to his daughter or to his wife because he doesn't think they would continue it. He wants to believe that the collection is historically important and that people will someday appreciate what he has accomplished. This type of inheritance pattern requires further research to determine its structure and consequences.

In contrast, a 79-year-old man who had accumulated three garages of functional materials to share with neighbors (properly a hoard rather than a collection) indicated that his children wanted him to get rid of all of it. He resisted until he was put in the position of serving as the executor of an even older neighbor's estate. When we visited him in follow-up interviews, he had in fact begun clearing things out of the garages. Although the strategies differ, both informants are making some efforts to resolve the dilemma posed by their life-long pattern of acquisitiveness.

8. There is a Simultaneous Desire for and Fear of Completing a Collection

The desire to complete a collection has been cited as a feature that distinguishes human collecting from more innate hoarding tendencies in certain animal species (Rowed 1920). Desire for completing a collection has also been taken as evidence of

compulsiveness among collectors (Wiseman 1974). Given notions of extended self, what is being completed is really the collector (see Wicklund and Gollwitzer 1982), at least to the "Type B" collectors (Danet and Katriel 1986). At the same time there seems to be a paradoxical fear of completing a collection (e.g., Dannefer 1980, Olmsted 1987). For if one is a collector and there is nothing left to collect, who is one then? This fear also emphasizes the commonly heard justification that the fun is in the hunt and acquisition rather than in the possession of a collection. Only continual acquisition reinforces the sense of mastery and prowess. A common strategy to avoid completion is to redefine or add new collecting interests as completion nears. A different sort of problem occurs when financial means, time, or space prohibit enlarging one's collection, as with car collecting for those with moderate means. Two strategies are possible. One is to improve one's collection continually, either by modifying the items owned or by trading-up. The other strategy is to develop a "serial collection" in which the items in the collection are owned sequentially rather than simultaneously.

The desire for closure is seen in a baseball card collector who wanted to have one card for each major league player in a particular year, and a man who had travelled to all but one continent and would like to go to Antarctica just to complete the set. At the same time the fear of completion is shown in such strategies as developing higher standards as a way of insuring that the collection is never complete. A collector of baseball cards can try to trade up to have a collection that is in "mint" condition. Commercial sources often aid in expanding even highly specialized categories. Just as new Precious Moments figurines are constantly introduced into the marketplace, previous models are constantly removed from production, thereby increasing the set of "retired" figurines that a collector can seek. Similarly, there are now several companies that issue series of baseball cards, so a collector can start a second company's series if one nears completion. And collectors also expand to prevent completion by beginning to collect peripheral items. A jazz record collector also collects magazines about jazz. An antique collector with a house filled with furniture said she was now looking for accessories.

Conclusion

Because no comprehensive integrated model of collecting exists in the social science literature, we have advanced a number of propositions toward such an end. Our data suggest that collections may be fruitfully classified on at least three dimensions or distinctions: conscious/unconscious, vertical/horizontal, and structured/unstructured. We shall discuss each of these distinctions briefly, as an illustration of the utility of thick description to effective model building. A deep understanding of collecting, based on additional field data and etic constructs is forged in a subsequent treatment.

The *conscious/unconscious* dimension refers to the extent to which a recurrent theme is intentional, purposive, recognized, and/or formally instituted as opposed to unintended, haphazard, below the level of awareness, and/or informally organized. Collections high or low on all four of these attributes lie at the extremes of this dimension; mixed cases fall toward the middle range. A prototypical example is the collection of advertising artifacts which was found to be a goal-

oriented, organized activity that intentionally provides a clearly recognized focus for the collector's life's work and hobbies to the point where he has officially instituted an archive and designated himself as its curator. By contrast, careful observation and photographic documentation uncovered an unconscious theme in another informant's collection of art objects in which a recurring animal motif lay below the level of conscious awareness (see Holbrook forthcoming).

The *vertical/horizontal* dimension reflects the degree to which a collection is housed in one centrally located array (often literally "vertical" in its position on the wall or on shelves) as opposed to being spread or scattered throughout a space (so that visiting the entire collection requires "horizontal" movement). An illustrative example from the data is a collection of figurines, statuettes, and small porcelain objects that occupied two glass-enclosed display cases on both sides of the fireplace of one informant's living room; in a sense, if an object were removed from these vertical arrays, it would no longer belong to the collection. In vivid contrast, another informant's vast collection of hearts, ducks, geese, apples, and strawberries has expanded horizontally throughout her house; these objects pervade her space and appear in the most unsuspected places, which turned our photographic exploration of her home into a hunting expedition for hearts and geese.

Finally, the *structured/unstructured* dimension relates to how strongly the collection evinces aspects of order, balance, and symmetry as opposed to entropy, collative properties, and disarray. A structured collection is illustrated by a collection of silver spoons that hangs in a well-ordered, carefully balanced, highly symmetric display in an informant's dining room. Indeed, its structured regularity may reflect a tendency on her part toward the pursuit of symmetry whose visual manifestations reach their apotheosis in the meticulously matching patterns of the bedspreads, wallpapers, and curtains in her newly constructed master bedroom and recently redecorated guestroom. At the other extreme, another family's collection of stuffed animals lies around the house with no particular indication of organization or planning. Similar evidence of the ability to tolerate or even to prefer asymmetric arrangements appears in the flawed pattern of knobs on this family's kitchen cabinets, in the violated gestalt or negative synergy that characterizes one corner of the master bedroom, and in the comparatively lopsided positioning of the objects in and around the master bed. This latter arrangement contrasts vividly with the exaggerated symmetry of the master bedrooms in the other houses we visited in the same town.

Combining the conscious/unconscious, vertical/horizontal, and structured/unstructured dimensions into one three-dimensional space and treating each as a simple dichotomy or trichotomy produces an eight- or twenty-seven-celled typology of collections that sets forth the conceptual possibilities in this particular classification scheme. Empirically, some combinations appear more likely than others; in other words, in actual fact, the dimensions or distinctions are related. Conscious-vertical-structured and unconscious-horizontal-unstructured collections appear more probable than others, as in the spoon and Hummel figure collections as contrasted with the animal artwork and stuffed animal collections. These two types were most evident in the household collections documented by Ruesch and Kees

(1956). We also expect that the former is more related to Danet and Katriel's (1986) Type B collector, while the later should be more typical of Type A collectors. However, other combinations also occur and, conceptually, still others are possible. The hearts and geese were conscious-horizontal-unstructured; a pesticide collection was unconscious-vertical-semistructured (Holbrook forthcoming).

These dimensions, as well as a number of other structural and processual features, are essential to capturing the complexity of collecting behavior. As our naturalistic inquiry into collecting proceeds, these eight propositions will be further refined or recast, and the phenomenon more thoroughly interpreted through the prism of consumer research.

[DUE TO SPACE CONSTRAINTS, REFERENCES ARE OMITTED. THEY MAY BE OBTAINED FROM RUSSELL BELK, GRADUATE SCHOOL OF BUSINESS, UNIVERSITY OF UTAH, SALT LAKE CITY, UT 84112]

Meta Analysis of Involvement Research

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Abstract

In recent years the involvement construct has received quite a bit of attention from consumer researchers. Only minimal agreement has been reached on how the construct should be defined. This paper attempts to integrate the research on involvement by applying a meta analysis to studies which have used involvement as an independent variable. The analysis does not identify a "right" definition of involvement. Rather, it highlights that the term cannot be used in a global sense because effects differ depending on how the involvement construct is defined.

Introduction

While scholars claim consensus among researchers that involvement means personal relevance or importance (Greenwald and Leavitt 1985), there are wide variations between the definitions of involvement espoused in the literature. An intuitive agreement that involvement is a unique construct has not alleviated researchers' difficulties in deriving a unique conceptual and, hence, operational definition. Because of this, it is difficult to compare one study with another.

This review raises issues about the involvement construct. One of the issues is whether research results have differed based on the definition of involvement used. The review does not seek a "right" definition.

Approaches to Involvement

Approaches to the involvement construct differ on several dimensions. This author identifies four such dimensions: content, object, nature, and intensity. The three approaches distinguished by the content dimension pretty much correspond to Houston and Rothschild's three types of involvement (1978). Each type may vary on the object, nature, and intensity dimensions. The current formulation provides progressively finer aspects by which to characterize definitions. The following discussion describes these dimensions.

Content Dimension

The content dimension differentiates the way researchers have used the term "involvement" according to its position along an antecedent-consequent continuum. The literature has identified three major approaches: the cognitive approach, the individual state approach, and the response approach.

Cognitive approach: According to the cognitive approach, involvement is a permanent relationship, and thus it can only be measured, not manipulated. This approach suggests that involvement should be included as a covariate in many studies, especially studies of advertising effectiveness. Of course, one must account for involvement with more than one object: the product, the medium, and the spokesperson. In this case, it may be the interaction which is enduring (involvement with the product in the ad medium and spokesperson situation).

State approach: Individual state approaches treat involvement as a mental state at a particular point in time (Mitchell 1979). The state approach separates involvement from its antecedents and consequents. It

suffers, however, from the problem of being defined in terms of other concepts. The involvement state is frequently defined in terms of arousal, motivation, attention, or interest. If involvement is any of these, it is not a unique construct and is therefore unnecessary.

Response approach: Response-based approaches take the consequent position and measure involvement in terms of response patterns (Ray 1973; Batra & Ray 1983). Responses don't seem to need a new label such as "involvement" so this conceptualization seems weak. While constructs are typically measured by items that are expected to correlate with each other and with the construct, *construct validity* is evaluated in terms of the correlation between the measured construct and *other* constructs to which it theoretically relates. Involvement should certainly be expected to correlate with responses, but involvement is not responses per se. They are theoretically related but not one and the same. If they are the same, then the term "involvement" is unnecessary.

Object Dimension

Mitchell (1979) has drawn attention to the notion that involvement does not exist in the individual independent of an object. It is involvement *with* something. It has a direction. The object of involvement may be a product, an ad, or a situation.

Product: The attributes of a product as well as the individual's need and experience are thought to influence involvement with the product.

Ad: Attributes of an ad, source credibility, and humor may influence involvement with the ad. Studies of cognitive responses to persuasive messages often deal with involvement with the ad.

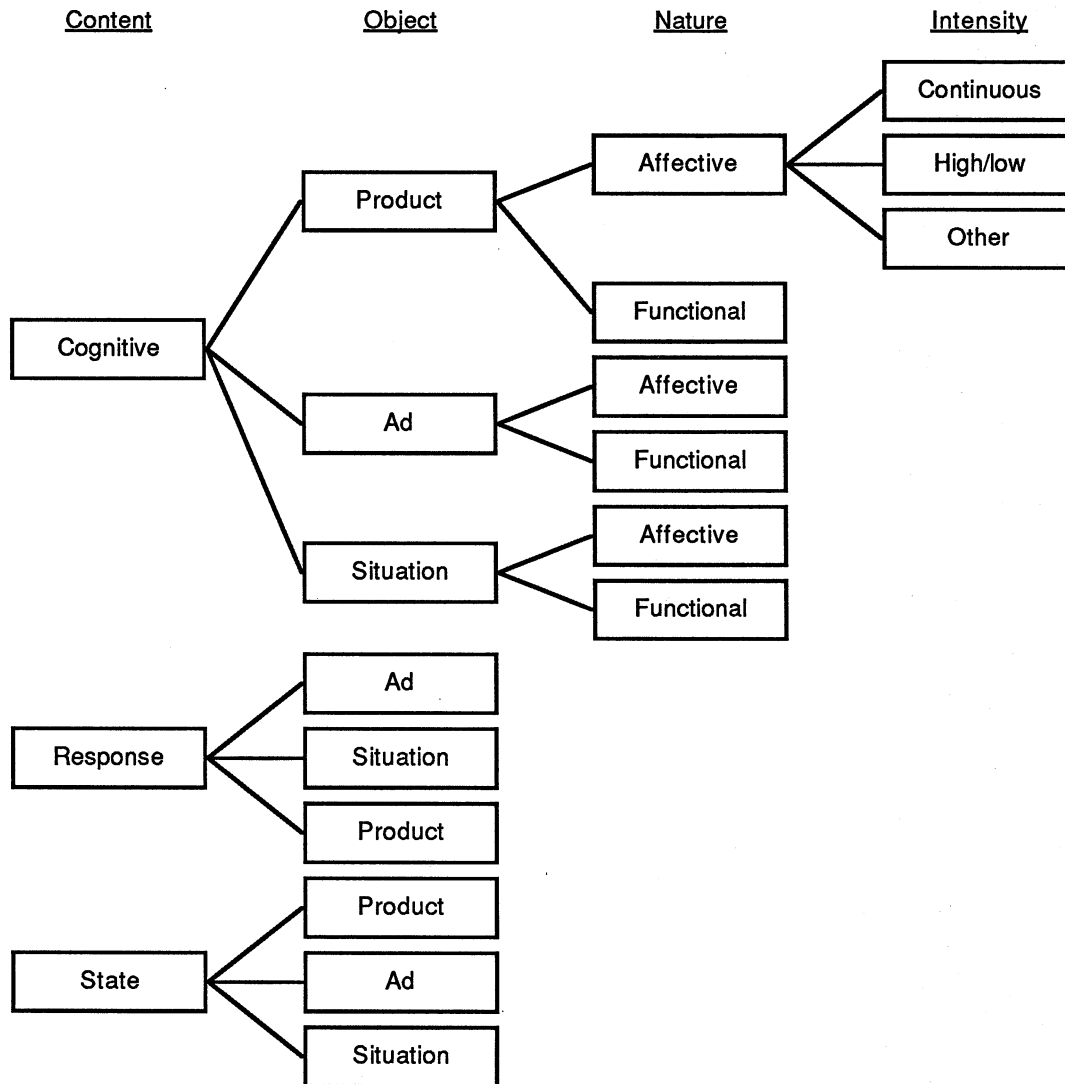
Situation: Situational involvement encompasses such aspects of the situation as the task and the media. This seems to be related to the amount of effort required of the individual. Tasks which require an evaluation of a product are thought to be more involving than rote tasks such as proof-reading. As for media, print is thought to be more involving than video because the individual must take a more active role in order to process the information.

Nature Dimension

Park (Park & Young 1983; Park & McClung 1986) has suggested that involvement can be affective or cognitive in nature. Affective involvement is the expressive, emotional type of involvement. Nelson, Duncan, and Frontczak (1985) used this type when they measured involvement in terms of whether a message was "interesting," "boring," or "exciting." Cognitive involvement comes from functional motives. Laurent and Kapferer (1985) call it rational. The functional nature of involvement is represented by Petty, Cacioppo, and Schumann (1983). Their subjects who expected to receive a product were highly involved with that product.

The notion of an emotional or functional nature of involvement further serves to make involvement a multi-dimensional construct. Many authors do not specify this aspect of involvement in their working definitions.

Figure 1
Hierarchy of Definitions



Intensity Dimension

Intensity of involvement is usually referred to in terms of high and low. Some authors use more than two categories, (Zaichkowsky 1985b). In some cases, involvement is conceptualized as a continuous variable and measured in scale scores. This also contributes to the difficulty of comparing studies.

Summary of the Involvement Construct

Nearly all definitions of involvement can be categorized along the content dimension. This dimension offers the greatest potential for grouping definitions of involvement. Conceptual definitions of involvement have differed regarding inclusion of the object and nature dimensions. Some address these aspects while others do not. Definitions may be distinguished hierarchically as in Figure 1.

It is apparent that definitions of involvement differ from study to study. Comparisons of involvement studies therefore are difficult. However, these differences suggest that a meta analysis of involvement studies

should investigate whether the operational definition of involvement affects the results.

Meta Analysis of Involvement Studies

Meta analysis is a quantitative method for reviewing literature. It uses statistical procedures to synthesize the results of investigations which have already been conducted. Meta analysis may address the following questions:

- (1) Is there a relationship between two variables?
- (2) What is the average strength of that relationship?
- (3) Is it consistent across studies?
- (4) If not, what explanatory variables account for the variance?

Of particular interest is whether definitional differences account for variation in results across studies (question 4). Questions 1 and 3 will have to be answered ("yes" and "no," respectively) before we can address this issue.

Criteria for Inclusion and Coding of the Studies

We conducted a meta analysis on studies which investigated the effects of involvement. The sampling frame was limited to research published in four marketing publications between 1976 and 1986. Eighteen articles reported usable empirical results. Of these, 1 came from *Journal of Marketing*, 2 were from *Journal of Marketing Research*, 5 were from *Journal of Consumer Research*, and 10 came from *Advances in Consumer Research*.

Many of these studies provided useful information for more than one dependent variable. Rather than waste all of this information, these studies became two observations in the meta analysis. No study was allowed more than 2 results in the meta analysis. Table 4 lists the articles and shows the number of results that they provided for the meta analysis.

One rater coded a variety of characteristics for each study. Of particular interest is the definition of involvement. Involvement was coded along the four dimensions discussed above. Along the content dimension a study was coded "cognitive" if it defined involvement as an enduring relationship between individual and object. Perceived personal importance of an object or a predisposition to respond fit this definition. Thirteen of the observations (43%) fell into this category.

A study was coded as taking a "state" approach to involvement if it operationalized the construct in terms of the mental state or goals of an individual at a particular point in time. This state might be evoked by the stimulus or brought to the situation by the individual (such as mood). Thirteen of the meta analysis observations (43%) were coded into this category.

The "response" category of the content dimension was reserved for those studies which operationalized involvement in terms of the extensiveness and pattern of cognitive and behavioral processes. Only 2 of the observations (7%) fit this category. Two observations left the content aspect of involvement unidentified.

Each study's working definition of involvement was also coded as to the object or direction of involvement. This could be a product, an ad, or the situation. Coding "product" was indicated when involvement was defined as interest in a product or importance of a product.

Involvement was directed toward an ad when the message itself was personally relevant to an individual. This was the case in Petty and Cacioppo's studies (1981; Petty, Cacioppo, & Schumann 1983) which used messages about campus policies that would be implemented at the subjects' university (high involvement) or at another university (low involvement).

Situational involvement could be either involvement with the task in the situation or with the ad's medium in the situation. For example, a product evaluation is commonly used to operationalize a high involvement task. Print ads versus television ads are often used to manipulate high versus low involvement in terms of medium. Most of the studies in this meta analysis investigated product involvement (23 of the 30). Three looked at involvement with an ad and four examined involvement with the situation.

The nature of involvement was evaluated by the content of related attitude structures. If involvement was defined by emotional motives, liking and other expressions of affect, it was classified as affective in nature. Four of the studies fell into this category. If

involvement was defined as related to rational, cognitive motives, such as a problem to be solved or personal relevance of consequences, it was classified as functional in nature. Twenty of the studies fit this classification. Six of the studies (20%) did not provide information to enable evaluation on this dimension.

Intensity of involvement distinguished the studies as to whether they used a continuous or a dichotomous measure of involvement. Eleven of the studies used continuous measures and 16 used a dichotomy to distinguish levels. Three studies used a categorical measure with more than two levels. These were coded into a third category for intensity.

This meta analysis combines studies which examined different dependent variables in relation to involvement. Effects of involvement may differ depending on the dependent variables. Four categories for dependent variables were generated and used in the analysis. Nine of the studies dealt with attitudes, either attitude formation or change. Nine dealt with some kind of behavior such as gift selection effort or acquisition behavior. Five studies examined brand or ad recall. Seven of the studies used another form of involvement as the dependent variable¹. A table of codes for each of the studies is available from the author.

Results of the Meta Analysis

The first stage in the meta analysis was to compare significance levels. This procedure was implemented to address the question of whether involvement had a significant effect in any of the contexts in which it was studied. Since most of the articles simply reported significance or nonsignificance, exact p-values associated with test statistics were obtained using SAS functions. Analysis proceeded on the one-tailed p-values. All of the results of the meta analysis are displayed in Table 1.

When comparing significance levels, the first step is to test the null hypothesis that all effects are insignificant. If we reject the null hypothesis then we conclude that there is a significant effect of involvement in at least one study. Two combination procedures have been suggested as most popular: Fisher's inverse chi-square method (Hedges & Olkin 1985) and Stouffer's inverse normal method (Brinberg & Jaccard 1986; Rosenthal & Rubin 1979). Both will be used here.

For a comparison of significance levels by Fisher's inverse chi-square method, we compute P:

$$P = -2 \sum \log p_i$$

and compare P to C. C is obtained from the upper tail of the chi-square distribution with 2k degrees of freedom (k is the number of studies)².

We reject the null hypothesis if $P \geq C$. In this case:

¹ Primarily, these followed Houston and Rothschild's framework (1978) and investigated the effects of situational and enduring involvement on response involvement.

² In this case k is 27 because 3 observations did not provide all of the information needed to compute p.

Table 1
Outcomes of Meta Analysis of Involvement Studies

Test	Critical Value	Test Statistic
<i>Comparison of Significance Levels</i>		
Fisher's Inverse Chi-Square $P = -2\sum^k \log p_i$	for $\chi^2(.95, 54)$ $71.42 \leq C \leq 83.30$	400.89
Stouffer's Inverse Normal $Z_s = \frac{\sum^k z_i}{\sqrt{k}}$	$z(.95) = 1.645$	13.52
$Z_{adjusted} = Z_s \frac{1}{\sqrt{1 + (n-1)r}}$	$z(.95) = 1.645$	10.08
<i>Homogeneity of Effect Sizes</i>		
$Q = \sum_k (n_i - 3) (z_i - z_+)^2$	$\chi^2(.95, 29) = 42.56$	203.92
<i>Model Specification</i>		
weighted error sum of squares By Dependent Variables	$\chi^2(.95, 14) = 23.68$	69.72
attitude	$\chi^2(.95, 1) = 3.84$	3.93
behavior	$\chi^2(.95, 2) = 5.99$	4.80
involvement	$\chi^2(.95, 2) = 5.99$	1.62
recall	not enough observations to test	

$k = 27$

$71.42 \leq C \leq 83.30$ (for $\chi^2(.95, 54)$)

$P = -2 \sum \log p_i = 400.8882$

$P > C$ so we reject the null hypothesis and conclude that involvement has a statistically significant effect in at least one study.

When significance levels are compared by Stouffer's inverse normal method, we first find the standard normal z's associated with the p-values. This was done using the PROBIT function in SAS. Then we compute

$$Z_s = \frac{\sum z_i}{\sqrt{k}}$$

We will reject the null hypothesis of no significance if $Z_t > Z_{.05}$ from the standard normal z-table. We find

$$Z_s = \frac{70.2633}{\sqrt{27}} = 13.5222$$

$Z_{.05} = 1.645$

$Z_s > Z_{.05}$ so we again reject the null hypothesis.

Adjustment for Nonindependence

Since some of the observations in the meta analysis come from the same studies, they are not independent as assumed by the above analyses. Strube

(1985) notes that when there is positive correlation between significance tests within studies, the Type-I error rate will be inflated if adjustments are not made. In other words, we will be more likely to reject a null hypothesis which is true. Strube offers a method to account for dependence by including the appropriate covariance terms:

$$Z_{adjusted} = Z_s \frac{1}{\sqrt{1 + (n-1)r}}$$

where n is the number of findings per study and r is the correlation among the significance tests within studies. A direct measure of this correlation is hard to come by but it can be estimated by the correlation between the dependent variables. Lacking this information, as we do, upper and lower bounds of the correlation can be estimated using 0 as the lower bound and the maximum reliability of the scales as the upper bound. In this instance, the reliability information is absent and .80 has been used as the upper bound estimate for r. This is noted by Nunnally (1978) as a "good" scale reliability. Since the scales used in the studies probably were not perfect measures and since the correlations between dependent variables are not likely to be perfect either, .80 seems like a liberal estimate for maximum r. And it is a conservative estimate for the lower bound of z. Using this, we arrive at:

$Z_{upper\ bound} = 13.5222$

$$Z_{lower\ bound} = \frac{13.5222}{\sqrt{1 + (2-1) .8}} = 10.0788$$

Since both of these values are greater than 1.645, we still reject the null hypothesis. Both Fisher's method and Strube's adjustment to Stouffer's method lead us to reject the hypothesis that there are no significant effects of involvement.

File Drawer Problem

This analysis may be biased due to using only published research. It is possible that work that has been done but is still in file drawers and work that is yet to be done show no effects for involvement and that meta analysis results could differ if these studies were included. To address this issue, we can estimate the tolerance for null results using Rosenthal's formula for "Fail-Safe N" (1979). This provides an estimate of the number of studies which find null results but which are unavailable to this analysis (remaining in file drawers or yet to be conducted) that must exist for the meta analysis to fail to reject the null hypothesis.

The formula, with Strube's (1985) adjustment for nonindependence is

$$NS = \frac{\left(\frac{\sum z_i}{1.645}\right)^2 - \sigma^2}{n + n(n-1)r}$$

NS is the number of studies.

n is the number of results per study. The number is fixed at 2 as it was in this meta analysis.

r is the within study correlation. An interval (lower bound and upper bound) will be calculated as discussed above.

σ^2 is the variance of the linear combination of z's (i.e., the sum of the variance of the z's plus 2 times their covariances).

Since they are z's (mean 0, variance 1), each variance = 1 and the sum is k (the number of studies). The covariances are the correlations between results from the same study. Again, we use .80 as the maximum expected correlation. In this meta analysis there are 12 dependent observations, observations which come from the same study. The covariances between studies are assumed to be 0. The variance-covariance matrix in Table 2 makes this clear. Therefore, the computation for Fail-Safe N adjusted for 80% correlation is:

$$NS = \frac{\left(\frac{70.2633}{1.645}\right)^2 - 27 + 2(12)(.80)}{2 + 2(2-1).80}$$

The upper bound, computed for $r = 0$ is:

$$NS = \left(\frac{\sum z_i}{1.645}\right)^2 - k$$

$$NS = \left(\frac{70.6334}{1.645}\right)^2 - 27 = 1797.4242$$

We need at least 494 studies with null results to lead us to fail to reject the null hypothesis of no significant effect of involvement. Thus, it looks like we can be fairly confident that there is a significant effect of involvement. Analysis of significance levels, however, does not tell us much about the direction, magnitude, or

consistency of effects. The second stage of the meta analysis examines effect sizes from the pool of studies.

Analysis of Effect Sizes

The first step toward analysis of effect sizes is to obtain a common metric for comparison across studies. All test statistics were converted to r's as suggested by Wolf (1986). The guidelines for conversion are shown in Table 3.

Rather than comparing r's, Hedges & Olkin (1985) recommend transforming them to z's by the Fisher r-to-z transformation. This serves to normalize the distribution and to make the variance independent of the population correlation. The formula for transformation is:

$$z \equiv z(r) = 1/2 \log (1 + r)/(1 - r)$$

Now, effect magnitudes can be compared across studies by comparing z's. When the sample size of r's is large, z is approximately normally distributed with mean Z and variance $1/n$. For moderate size samples, $1/(n-3)$ is a more accurate approximation to the variance of z (Hedges & Olkin 1985). The correlations and z-transforms are shown in Table 4.

The first thing we want to know is whether the effects of involvement are homogeneous across studies. If they are, then we can pool estimates to obtain an estimate of the common effect of involvement. If effect magnitudes are heterogeneous then it would be misleading to pool the estimates. In this case, the source of the differences should be traced. Given that involvement has been inconsistently defined across studies, it is reasonable to expect to find heterogeneity of effects. It is also reasonable to expect that the differences may be related to the definitions used.

We will reject the hypothesis of homogeneity if:

$$Q = \sum^k (n_i - 3)(z_i - z_+)^2$$

exceeds a critical value from the chi-square distribution with $k-1$ degrees of freedom.

k = number of studies = 30

n_i = sample size in the i^{th} study.

z_+ = weighted average effect size

$$z_+ = w_1 z_1 + \dots + w_k z_k$$

$$w_i = (n_i - 3) / (n_j - 3)$$

$(n_j - 3)$ = the inverse of the covariance of the z's.

If Q is less than chi square with $k-1$ degrees of freedom, then the effect sizes are considered homogeneous and z_+ is the z-estimate of the common correlation. If this is the case, the next step would be to test whether $z_+ = 0$. If $Q >$ chi square with $k-1$ degrees of freedom, then the effect sizes are heterogeneous and we will proceed to test possible explanations.

We find $Q = 203.9178$ which is greater than chi square $(.95, 29) = 42.56$. We conclude that the effect sizes are not homogeneous and we will proceed to analyze for explanations.

Table 4
Effect Magnitudes: Correlation and Z-Transform

Author	Year	Journal	R	Z
Arora	1982	JMR	.40	.4237
Arora	1982	JMR	.35	.3654
Belk	1982	ACR	.25	.2558
Belk	1982	ACR	.10	.1000
Clarke & Belk	1979	ACR	.24	.2399
Clarke & Belk	1979	ACR	.30	.3083
Gardner, Mitchell, & Russo	1978	ACR	.52	.5792
Kahle & Homer	1985	JCR	.20	.1998
Kahle & Homer	1985	JCR	.13	.1331
Lastovicka	1979	ACR	.22	.2236
Laurent & Kapferer	1985	JMR	.64	.7548
Laurent & Kapferer	1985	JMR	.35	.3609
Nelson, Duncan, & Frontczak	1985	JM	.53	.5902
Nelson, Duncan, & Frontczak	1985	JM	.33	.3428
Park & McClung	1986	ACR	.20	.2004
Parkinson & Schenk	1980	ACR	.53	.5920
Parkinson & Schenk	1980	ACR	.33	.3428
Petty & Cacioppo	1981	ACR	.21	.2086
Petty & Cacioppo	1981	ACR	.22	.2187
Petty, Cacioppo, & Schumann	1983	JCR	.20	.2076
Petty, Cacioppo, & Schumann	1983	JCR	.21	.2103
Rothschild & Houston	1980	ACR	.35	.3633
Rothschild & Houston	1980	ACR	.16	.1607
Swasy & Munch	1985	JCR	.15	.1468
Swinyard & Coney	1978	JCR	.00	.0010
Zaichkowsky	1985	ACR	.65	.7820
Zaichkowsky	1985	ACR	.78	1.048
Zaichkowsky	1985	JCR	.68	.8291
Zaichkowsky	1985	JCR	.42	.4477
Zinkhan & Muderrisoglu	1985	ACR	.25	.2554

distribution with $k - p$ degrees of freedom (p is the number of parameters in the model)³. So, to test that the model

$$Z = X\beta$$

adequately fits the data, we compare the weighted error sum of squares to the critical value for chi-square with $k - p$ degrees of freedom. The weighted error sum of squares for the model is 69.72. Comparison to $\chi^2(.95, 14) = 23.68$ leads us to reject the hypothesis that the model is correctly specified. This model does not adequately account for the variation in z . Because of this, the parameter estimates do not necessarily converge on the true values. Therefore, their interpretation is inappropriate.

³ This model contains four levels for the content dimension (cognitive, state, response, and unidentified), three levels for the object dimension (product, ad, and situation), three levels for the nature dimension (affective, functional, and unidentified), and three levels for the intensity dimension (continuous, high/low, and multi-categories). The nesting procedure results in 16 distinct definitions in this selection of studies.

Specification of the same model was also tested for each level of the dependent variables studied. That is, for each category of dependent variable investigated by studies in the pool, a separate model test was performed. For studies which investigated the relationship between involvement and attitude, the error sum of squares is 3.93. When this is compared to chi square $(.95, 1) = 3.84$, we conclude that the model does not adequately explain the effect sizes for this group. For studies which investigated behavior or involvement as a dependent variable, the model is accurately specified. Error sum of squares equal 4.80 and 1.62, respectively and are compared to chi square $(.95, 2) = 5.99$. Not enough studies in the sample used recall as a dependent variable to enable evaluation of model specification (the degrees of freedom were used up by the explanatory variables in the model).

Sources of Poor Fit

Potential sources of poor fit are outlier studies, multicollinearity of the independent variables, omission of important independent variables, and measurement error. The effect sizes listed in Table 4 do not show any extreme outliers. It could be that some of the involvement dimension levels are not discriminators and could be combined. Combining categories could reduce multicollinearity and increase the available degrees of freedom.

Measures of other characteristics of the studies are available for use as independent variables. Differences in results were not accounted for by the type of dependent variable studied. Unfortunately, the sample size prohibits inclusion of very many explanatory variables. Degrees of freedom are used up rapidly by these categorical variables.

It is likely that the model doesn't fit because a great deal of variation is due to measurement error, both in the meta analysis and in the individual studies. Integration of studies that contain measurement error by a procedure that itself contains measurement error just magnifies the problem. We did not attempt to adjust for measurement error in the studies because the necessary information was not available. We also do not have any measure of the error in the meta analysis procedure because only one rater coded all of the studies.

Summary

The comparison of significance levels indicates that involvement does indeed have a significant effect in the pool of studies. Bias due to publication of statistically significant results would have to be countered by at least 494 studies with null results.

Comparison of effect sizes indicates that the effect of involvement was not consistent across the studies. This was not surprising given the variety of conceptualizations of the involvement construct. However, the dimensions of involvement that we identified as being sources of variation in definitions did not adequately explain the differences in effect sizes. So, we have learned that studies of involvement do not find consistent results, but we were unable to explain the differences.

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Coalitions in Organizational Purchasing: An Application of Network Analysis

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Abstract

Coalitions are a little understood organizational phenomenon yet they may significantly affect purchasing decisions. This paper suggests that a network perspective would aid their investigation and proposes a model hypothesizing that coalition members' social ties affect the coalition's stock of resources and thus its strength and its ability to influence organizational buying decisions. Some of the tools of network analysis are suggested as a means to identify and analyze coalitions.

Introduction

Coalitions occur when individuals work in concert in order to achieve an objective such as to influence a decision and/or reduce the power of another participant (Anderson and Chambers 1985). Because complex organizational buying decisions are often characterized by conflict arising from differing values and objectives of the various decision participants (Anderson and Chambers 1984; Sheth 1973), coalition formation is thought to be a very prevalent conflict resolution strategy (Morris and Feldman 1984). Conversations with individuals involved in purchasing decisions, and observations of organizational purchasing suggest that coalitional activity may have a significant positive or negative effect on the process. Yet, aside from acknowledging their existence, and their likely strong effects on organizational buying (e.g. Anderson and Chambers 1985; Bagozzi 1978; Morris and Feldman 1984), theoretical and empirical knowledge about organizational coalitions is virtually nonexistent (Pfeffer 1981; Stevenson, Pearce and Porter 1985).

In large part, this problem is viewed as being directly attributable to the use of the individual level of analysis, which has been criticized elsewhere (Bonoma, Bagozzi and Zaltman 1978; Bristor 1987; Johnston 1981; Wilson 1985). The individual level of analysis is inappropriate because of the interpersonal interdependencies found in buying coalitions. Members act, not in isolation, but within the context of the larger social milieu of interpersonal relationships (Calder 1977; Johnston 1981) and thus, knowledge of buying outcomes requires more than knowledge of the decision participants as individuals (Bonoma 1982). Therefore, investigations of buying coalitions, and other organizational buying processes, would be better served by the adoption of the network level of analysis and the exploitation of the concepts and methods of social network analysis.

Toward this end, this paper develops a network based model of buying coalitions that can provide insight into issues such as the conditions under which coalitions are likely to form, their operating tactics, their effects on decision outcomes and the organization, and how coalitions might be identified. The paper is organized as follows. First, coalition activities are framed as political activities. Second, after considering the applicability of experimentally-based coalition theories, recent efforts in the organizational behavior and organization buying literatures are drawn upon to form a network-based model of purchasing coalitions. Finally, some measurement and analysis issues are addressed.

Coalition Theory

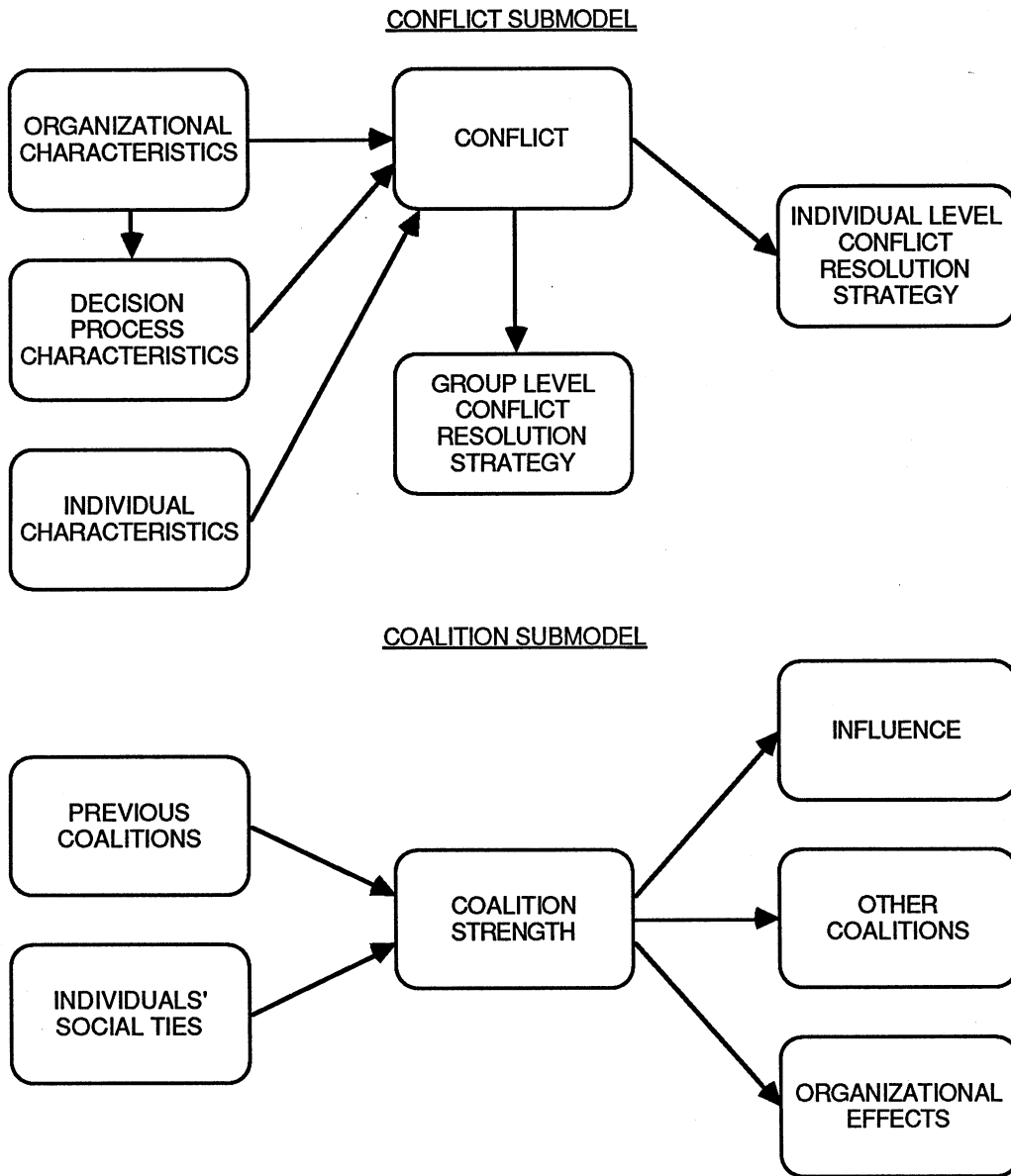
Although political activities have long been recognized as an element of organizational behavior (Burns and Stalker 1961), it is only recently that researchers have advocated that a political perspective on organizational processes be adopted (Pfeffer 1981). One of the distinguishing features of a political perspective is that it explicitly recognizes the various informal structures through which organizational members attempt to exert influence and accomplish their personal and departmental goals (Bacharach and Lawler 1980; Burns and Stalker 1961). One of these informal structures, the coalition, is likely to form in competitive situations where the distribution of power (actual or perceived) is such that one or more parties views him/herself as disadvantaged with respect to obtaining an outcome individually, but not necessarily when joining forces with others to pursue that outcome (Rubin and Brown 1975). Since organizational buying behavior is organizational behavior (Anderson and Chambers 1985; Barclay 1986), and involves lateral relationships (Strauss 1962), and non-task, as well as task, factors (Webster and Wind 1972), a political perspective is viewed as an appropriate vantage point from which to investigate organizational buying, including coalitions.

Coalition research is traditionally associated with the political science and social psychology literatures. This research typically forces coalition formation in newly formed three-person groups in controlled laboratory experiments. Issues typically revolve around which two members form the coalition and the payoff division. It generally assumes perfect information, objective and rational decision making, zero-sum outcomes, and known, divisible winnings (Stevenson, Pearce and Porter 1985). In contrast, those researching actual organizational coalitions are concerned with issues such as when and why coalitions form, what activities they engage in and how they affect organizational processes. They assume imperfect information, non-zero-sum outcomes, historical and expected future relationships, and subjective and cognitive decision making. Because of these differences, the analysis of organizational coalitions must begin to develop its own theory and empirical base (Pfeffer 1981). Towards this end, the next section outlines a network-based model of buying coalitions.

Model of Buying Coalitions

As previously advocated, this model is based on the notion that purchasing participants are embedded nonindependently in an interpersonal network of relationships through which influence, opinions, information and liking/disliking, etc. are transmitted. Thus, to understand coalitions, and other purchasing processes, participants must be studied in the context of their social network of relationships. The relationships themselves are key to the investigation because it is through their manipulation that individuals recruit and mobilize coalition members, and accomplish other goals (Boissevain 1974; Bristor 1987; Kapferer 1969).

Figure 1
NETWORK-BASED MODEL OF COALITIONS



A network can be defined as "A specific set of linkages among a defined set of persons, with the additional property that the characteristics of these linkages as a whole may be used to interpret the social behavior of the persons involved," (Mitchell 1969, pg. 2). Networks are easily represented as graphs consisting of points (people, groups, organizations or other social entities) and lines (relationships), (Harary, Norman and Cartwright 1965). Graphing a network can provide important information about the members and their relationships. For example, in contrast to the assumption of face-to-face interactions made by many buying center researchers, a graph may show that two members are not directly connected (Bristor and Ryan 1987).

The model, which is illustrated in Figure 1 and discussed below, consists of a conflict sub-model and a coalition sub-model. Part of the model is merely a synthesis of the various antecedents and consequences of

coalition formation that appear in the literature. However, it makes two unique contributions. First, it describes coalitions in terms of network characteristics. Second, its core hypothesis is that a coalition's ability to accomplish its goals is a function of its strength, as defined by its stock of social relationships and other resources contributed by its members.

Conflict Submodel

Antecedents to conflict and conflict resolution modes have been discussed by several authors and can be categorized into three groups: organizational variables, decision process variables and individual variables. Some of these are briefly described below.

The division of labor and task specialization results in task and resource interdependencies (Pfeffer 1981). The fact that some tasks are more important than others, tends to lead to perceived and real discrepancies in the distribution of resources and power (Morris and

Feldman 1984; Pfeffer 1981; Stevenson, Pearce and Porter 1985). These discrepancies, plus discommonalities in the reward system (Anderson and Chambers 1985; Morris and Feldman 1984; Sheth 1973) often lead to decision conflict. Decision process characteristics such as the number of participants, decision complexity, and the attendant time pressures also lead to conflict (Morris and Feldman 1984). Finally, individual characteristics such as risk orientation, bargaining experience, and attitudes toward winning and competition also affect conflict (Morris and Feldman 1984).

The resolution of conflict can assume many forms such as problem solving, persuasion, bargaining and "politicking" (Sheth 1983; Strauss 1962). Although these are typically thought of as individual strategies, they also have group level analogs. Given a tendency for political conflict resolution strategies, coalitions are likely to form when individual action is viewed as insufficient and/or when participants know that others hold similar outcome preferences. For example, in a purchasing situation where conflict centered on disparate purchasing goals, lower level engineering and plant maintenance coalesced and recruited higher level members to oppose a purchasing agent's vendor selection (Bristol 1987). Individually, these lower level employees had no chance of overruling the purchasing agent. Collectively however, they were able to use their personal connections to garner the resources needed to do so.

Coalition Submodel

In contrast to the experimental coalition research, non-winning coalitions do form in organizations (Pfeffer 1981). Thus the fact that decision participants perceive coalition formation as a resolution strategy is a necessary, but insufficient condition for an effective coalition. Two factors contribute toward a strong coalition. First is the network of social ties of individual members. Social ties are critical because they provide information about positions on purchasing issues and the distribution of power and resources. They provide the opportunity for shared perceptions to emerge and they facilitate the process of searching for allies (Pfeffer 1981; Stevenson, Pearce and Porter 1985). Ties therefore both lead to coalition formation, and they determine with whom they are formed (Morris and Feldman 1984). Second is whether some or all of the members have a history of previous coalitional activity. When there is a history, knowledge about ties and member resources can minimize the need to search for allies and to develop and coordinate tactics (Stevenson, Pearce and Porter 1985).

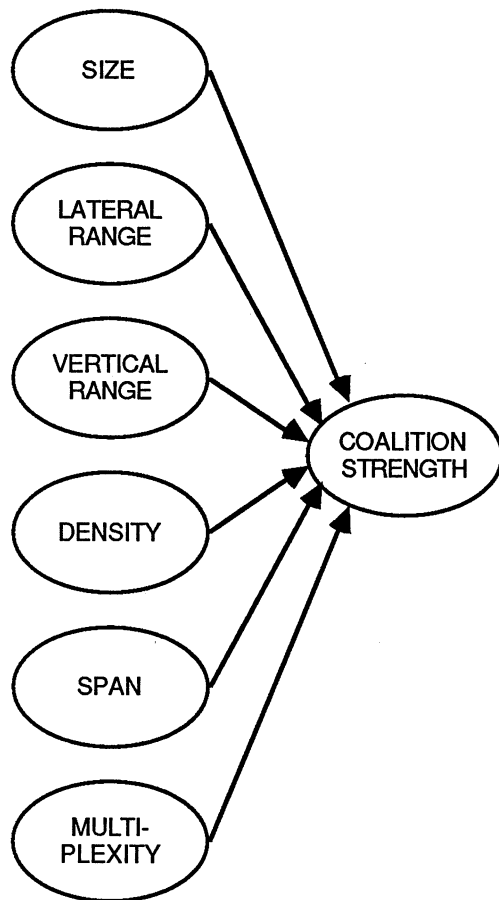
A coalition can be defined as a temporary alliance among some subset of the involved parties and as: "an interacting group of individuals, deliberately constructed, independent of the formal structure, lacking its own internal formal structure, consisting of mutually perceived membership, issue oriented, focused on a goal or goals external to the coalition and requiring concerted member action," (Stevenson, Pearce and Porter 1985 pg. 261). From the network perspective, this means that a coalition, as a subset of the complete network of decision participants, is a network itself wherein members work towards common goals. Therefore, similar to other networks, coalitions can be characterized and compared along a number of structural and interactional dimensions, some of which are described below (Bristol 1987).

In a purchasing situation involving coalitional activity, the strongest coalition is likely to determine the outcome. The concept of strength is related to the coalition's possession of resources such as people, information, expertise, authority, veto power, etc. (See Figure 2.) Since resources are controlled by people, coalition members' social ties determine their access and thus are key to building coalitional strength. Access is accounted for by several coalitional characteristics. First is coalition size. While the political science and social psychology literatures theorize that coalitions will form with the minimum number of members needed to win, this does not appear to be the case in real organizational settings where winning is not a zero sum proposition and where the outcomes are not necessarily a fixed amount of a scarce resource to be allocated among members (Pfeffer 1981). Therefore, coalitions intent on achieving their goals will tend to err on the conservative side (i.e., larger numbers) to preclude a potential member being recruited by another coalition and to maximize their chances of success. Size alone, however, is insufficient. It also matters who the coalition is composed of since each person brings a personal network of relationships to the coalition. People in similar structural roles are likely to have more similar resources than people in very different structural roles which suggests a need for diversity among coalition members. Thus resource accessibility, and coalition strength can be maximized by including a *broad lateral range and vertical range*.

Two other dimensions of coalition strength involve the linkage patterns rather than the members. First, *density* is the ratio of the actual number of relationships in the coalition, to the total possible number. This is an indication of the connectedness of the coalition. Coalitions are likely to be densely connected because, when people share homogeneous views and when the communication content is favorable, there is more communication on a given matter (Katz and Lazarsfeld 1955). Thus, while not inviolable, there is a tendency for small group processes such as face-to-face interactions to occur between coalition members to facilitate the transmission and coordination of information, coalition action plans, etc. Second, *span* refers to the ratio of the number of relationships in the coalition, to the number of total linkages in the entire network. Similar to the argument made about size, to the extent that a network member is involved in coalition relationships, s/he is less available for relationships outside the coalition.

Finally, a dimension of coalitions that describes the nature of the relationships themselves is *degree of multiplexity*. It is an indication of the complexity of the relationship. If a relationship contains only one type of relation such as information exchange, it is referred to as uniplex, if it contains more than one type, such as information exchange, friendship and advice, it is referred to as multiplex. In the coalitional context, a relationship composed of current and past coalition activity would be multiplex and as discussed previously, would make for a stronger coalition because members would already have knowledge about others regarding values, contacts and other resources. Thus, to the extent that there is a high degree of multiplexity in terms of past coalition activity, the coalition should be able to organize and mobilize more quickly than one without any previous history of coalition activity.

Figure 2
COALITION STRENGTH



Because coalitions operate outside the formal, legitimate organizational structure, precisely *how* they attempt to recruit members and accomplish their objectives is not well documented. It is generally agreed that members explicitly agree to join forces and are often active in their efforts to recruit other members (e.g. Stevenson, Pearce and Porter 1985). Coalition members may engage in advocacy activities and use information and appeals to rationality and reason to generate support. If this is insufficient, coalitions may also attempt to gather support or cooperation through the use of friendships, allies, past or future favors, and/or other forms of social indebtedness (Strauss 1962). Active gatekeeping and information manipulation and control are also coalitional tactics (Morris and Feldman 1984). For example, Thurman (1978/79) observed the use of rumor, criticism, withdrawal of support and denial of access to power by a levelling coalition (a coalition formed to destroy another person's power). In addition, Bristor (1987) observed a coalition that intentionally inflated financial estimates to support their preference and refused to meet with the vendor that the purchasing agent was advocating. Finally, Morris and Feldman (1984) also note that coalitions can set up "road blocks" that prolong the decision process.

Another coalition issue that has received little attention concerns the short and long term effects of coalitions. As previously suggested, coalitions may have a history and thus are dynamic over time. This

implies that some coalitions may have very strong, but subtle effects on the organization, and in fact, may reduce organizational effectiveness (Burns and Stalker 1961). Thus, although the immediate goal is usually purchasing influence, coalitions can also effect the attitudes and behavior of organization members, spawn the formation of other coalitions, and can effect the organization itself by reallocating resources, imposing systems to control coalition behaviors, coopting coalition activities into the mainstream and legitimating coalitions into the formal organizational structure (Stevenson, Pearce and Porter 1985).

Coalition Measurement and Analysis

One of the most difficult challenges facing organizational buying researchers in general and coalition researchers in particular is data collection and analysis. The network level of analysis argues against the collection of data from one or two key informants as is typical in organizational buying research. This is because of the earlier mentioned fact that two network members may not be directly connected. This implies that if they are distant (i.e. separated by many other members), they would not be able, and should not be expected, to give reliable reports about the other, in terms of activity, influence, etc. since they cannot "see" what goes on in parts of the network in which they are not embedded. Therefore, a reliable picture of the buying network and its members and activities requires a census of buying participants and provides the first step necessary for coalition identification.

The buying network can be constructed by snowball sampling procedures (cf. Moriarty and Bateson 1982) whereby the researcher begins with one or more names of known decision participants. Each of the named participants is asked to list other decision participants. The process continues until there are no new names. Sociometric data describing who talked to whom, and/or tried to influence whom, and/or was influenced by whom, etc., and other attitudinal, preference and demographic data is then collected from each participant. Once the buying network members have been identified, numerous network analysis techniques are available to characterize and describe the buying network and individuals' personal networks along dimensions such as those in the buying coalition model or to investigate other issues (Bristor 1987). Network analysis is a loose grouping of techniques capable of analyzing relational data, the specifics of which are beyond the scope of this discussion. (The interested reader should refer to Knoke and Kuklinski (1982) and Rogers and Kincaid (1981) for excellent discussions.)

Of relevance to this discussion is the fact that there are numerous techniques capable of detecting cliques, or dense areas, in larger networks. Thus, they can be used to empirically detect the presence of coalitions in a manner that is less intrusive and less sensitive to respondent bias, than direct inquiry. One promising technique is Siedman and Foster's (1978a and 1978b) k-plex method of clique identification which is included in MacEvoy and Freeman's (1987) UCINET network analysis package. The method is based on the notion of a maximal complete subgraph, which is the largest possible set of points on a graph where each point is connected to every other (Harary, Norman and Cartwright 1965). (See Reingen et al (1984) for a recent application.) In other words, in a clique, everyone is connected to everyone else, whereas in the complete

buying network, density, or connectedness, appears to be much lower (Bristor 1987). In some cases, this completeness requirement may be restrictive and thus it can be relaxed such that each of the n points need only be connected to $n-k$ others (Reingen et al 1984). Thus, following the process outlined above, the k -plex method could be used to identify coalitions in the organizational buying context. Additional attitudinal and behavioral data can also be used to validate a coalition's existence and to learn more about its activities.

Network analysis is not a panacea and many issues are yet to be resolved, as illustrated by Rogers' (1987) recent comments. However, the application of network concepts and analytic techniques did provide important insight into influence processes in organizational buying decisions (Bristor 1987). Thus, it is felt that their judicious application would also benefit the investigation of organizational buying coalitions.

Summary

Coalitions are a little understood organizational phenomena. Their investigation presents a challenge because of the lack of theoretical and empirical results, and because of methodological problems such as the sensitive nature of coalition activities, the fact that they are difficult to identify, and the time and effort required for sociometric data collection. This paper suggests that the adoption of a network perspective and the tools of network analysis could lead to theoretical and methodological progress.

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Methodological Issues in Studying Intergenerational Influences on Consumer Behavior

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ABSTRACT

In studying intergenerational influences on consumer behavior the researcher is likely to be confronted with several methodological issues. Such issues may relate to (a) choosing the appropriate theory, (b) conceptualizing and measuring the relevant variables, (c) choosing the appropriate research design, and (d) interpreting the data. This paper highlights some issues related to these areas and whenever possible suggests ways of addressing them.

INTRODUCTION

Researchers investigating intergenerational influences on consumer behavior are likely to be faced with a number of issues related to the methodology of studying such influences. Issues may range from those which relate to conceptual and theoretical underpinnings, to measurement and research designs. Although it would be rather difficult to address all the issues in this paper because of our limited knowledge of the area and space considerations, some of the most pressing areas deserve special attention.

The purpose of this paper is to present several key issues that researchers are likely to encounter, and to suggest ways of addressing them. Given that methodological issues in studying intergenerational influences can be present at various stages of the research process, those which are discussed in this paper are presented in the same order as the research process. Thus, issues related to appropriate theoretical and conceptual frameworks are discussed first, followed by issues related to the conceptualization and measurement of the influence processes, and lastly, the discussion focuses on issues related to the research design, data analysis and interpretation of the findings.

CONCEPTUAL FRAMEWORK

The theoretical and conceptual underpinnings of the approach can be found in theories of socialization. Specifically, the development of consumption-related orientations and the specific role of parents (agents of socialization) may be viewed in the context of a broader model of consumer socialization (Moschis 1987, Ward 1974). Previous reviews of the literature (e.g., Moschis 1987, Ward 1974) do not only suggest that the available data support the consumer socialization perspective as an approach to the study of intergenerational influences; they also suggest theoretical perspectives useful in understanding the processes of acquisition of consumer cognitions and behaviors.

It should be brought to the reader's attention, however, that the study of intergenerational influences is not always consistent with the socialization approach because of the assumptions made which may not always hold in the consumer socialization model. The study of intergenerational influences implicitly or explicitly makes a number of assumptions. First, the influence on consumer behavior "flows" from the older parent to the younger child. Second, the consumption-related orientations which are transmitted from one generation to the next are relatively stable and can be tracked; once they are transmitted they are held by both the influencer

and the influencee. Third, intergenerational influences represent primarily the effects of external social forces, parents in particular, on the person's consumer learning.

Research has shown that these assumptions may not always hold in the consumer socialization context. Specifically, there may be a reverse flow of influence from the child to the parent (the case of "reverse socialization"). Similarly, consumption patterns tend to change over a person's life cycle; and once they are acquired from parents they may undergo further formation and change. And, finally, the formation of select patterns of thoughts and actions may not necessarily be attributed to the person's social environment (parents), but rather to other factors. Thus, in conceptualizing intergenerational influences, the research must justify why intergenerational influences fit into a broader context of consumer socialization, and which theories and variables are related to this process.

Quite often the researcher's approach to the selection of variables is guided by strong suspicion and is based on his/her own speculations rather than theory and research in the area. The rationale for expecting a particular aspect of consumer behavior to be subject to intergenerational influences is often lacking.

Given that a number of approaches or theories can be used to study intergenerational influences, the researcher must decide on the appropriate framework. While elaboration on specific theoretical frameworks is beyond the scope of this research, the reader should be aware of the several theories which can be used to explain or study intergenerational influences (e.g., Moschis 1987), and how the specific theory may affect his or her approach. For example, interaction theories stress an active view of the individual in the socialization process. Researchers adopting this perspective would place greater emphasis on the learner's orientations toward the socialization agents, and how s/he interacts with them and is influenced by them. On the other hand, if one subscribes to connectionist theories, which view the socialization process as being externally controlled, the researcher's focus would be on the agent's behaviors and mechanisms used by the agent to influence the learner's behavior.

Before focusing on theoretical perspectives, the nature of the dependent variables that define the person's consumer role over his/her life cycle must be specified. The variables most relevant and desirable (from a societal perspective) must be identified and categorized to help us systematically conduct studies and accumulate research findings. A conceptual framework for classifying consumer behaviors is needed. While far from being adequate in terms of classifying a wide variety of consumption-related orientations, frameworks such as those presented by previous researchers (e.g., Moschis 1987) may well serve the purpose, particularly at the early stage of research. Researchers have a choice between conducting research in the area on an *ad hoc* basis and using a more systematic approach to their investigation. Given that the field of consumer behavior is rich in dependent variables, researchers could arbitrarily select to study any number of variables. A more systematic approach to variable selection should include: (a) the definition and placement of all aspects

of consumer behavior in a conceptual framework, and (b) the justification for studying select number of variables, where justification is primarily sought on specific theories.

The decision on the variables which define consumer behavior is not an easy one, given that we have limited understanding of the types of consumer behaviors that are likely to develop at various stages in the person's life. Perhaps one of the greatest difficulties in studying consumer socialization and consumer behavior over the life cycle is in understanding where certain changes in behavior as well as influences of socialization agents are likely to occur. Individuals are likely to acquire patterns of cognitions and behavior prior to reaching certain stages where theoretical explanations may account for differences in their thoughts and actions. Similarly, consumer socialization agents may have delaying effects.

INFLUENCE PROCESSES

Conceptual Issues

Researchers ideally should spell out the specific type(s) of influence in the transmission of specific skills, values, or behaviors from socialization agents (influencers) to influencee. A socialization agent (e.g., father, mother) may communicate certain information to the learner through various mechanisms. First, by performing certain acts an agent may consciously or unconsciously communicate certain norms and expectation. The communication in this case is likely to take place at a cognitive level, and influence and subsequent consumer learning is likely to be the result of observation or imitation of these behaviors. For example, a child may make a conscious effort to emulate the behavior of his father because the model's behavior is the most salient alternative open to him--i.e., he does the same thing his father does in an effort to be like him. Second, a socialization agent may influence the consumer behavior of others by using various reinforcement mechanisms, both positive and negative, in attempting to communicate to others certain desires. A parent, for instance, may reward certain behaviors which are consistent with such desires and punish others that are inconsistent. In an interpersonal setting, reinforcement may involve overt communication, such as praise for (positive) and complaining about (negative) using a product; it may also involve cognitive communication, where a person may dictate his/her desires to others by, for example, showing affection (positive reinforcement) and psychologically punish them (negative reinforcement).

Finally, socialization agents may affect the consumer behavior of the learner through overt communication processes, often referred to as the "social interaction" mechanism. The social interaction mechanism is less specific, and it may involve a combination of modeling and reinforcement. During the course of the person's interaction with socialization agents, a person may acquire certain attitudes, values, and behaviors, which are often communicated explicitly.

Social interaction processes can have content and structure. Content includes expectations (norms) held by the communicator as to what the desirable or prescribed behaviors should be; or it can be information about consumption. The structure, on the other hand, has different connotations. When it refers to interpersonal

processes it can be interpreted in the context of power and communication relations.

When researchers have to choose among the three socialization processes, they often can find little justification as to why certain processes should be included in, or excluded from the study. There is relatively little theory to suggest the skills, knowledge and behaviors acquired from specific agents, and much less to suggest the processes by which these are acquired. Furthermore, the decision on the various processes becomes even more difficult given that consumer-related orientations are likely to be transmitted via different processes in different socio-cultural settings (Moschis 1987).

Given our limited knowledge regarding the processes involved in intergenerational influences, it would be desirable to include all three processes wherever there is little theoretical or empirical justification to include specific ones, treating the type of influence operating as an empirical question. This process might help us accumulate some empirical evidence which might be useful for theory development.

Measurement Issues

Measures of intergenerational influence have been constructed from the point of view of the influencee, the agent, and the researcher. When such measures are approached from the influencee's standpoint, the focus is upon asking respondents to assess their response to the agent's behavior such as observations of parental behaviors and parental influence on their consumer decisions. Measures of influence can also be constructed from the influencer's perspective by asking individuals in the influencee's immediate environment to report such responses. For example, parents are asked to report on their influence on the child's behavior. While self-reported measures of influence may help researchers isolate the agent's effects from other third variables likely to produce similar responses, they rely on the respondent's ability to assess the extent of such influence.

Finally, researchers have used measures of agent's influence based upon the respondent's assessment of frequency and nature of interaction with the agent, inferring the agent's influence from statistically significant relationships between specific parent-child interactions and levels of consumer orientations. The aim is at falsifying the presence of influence rather than at confirming it. When a significant relationship is found the inference made is that variation in consumer orientation is due to the content of parent-child interaction. Lack of a significant relationship suggests that the agent may not influence the development of consumer orientations, or that the influence may not be linear.

There are several issues surrounding the measurement of frequency and nature of interaction (modeling, reinforcement, social interaction mechanisms). For example, while common operational definitions of modeling processes include source-learner similarity of behaviors and attitudes (Moschis 1987), most of the studies of consumer socialization have used measures of overt parent-child interaction about consumption. Considerably less attention has been devoted to the measure of the content of family communication, which is usually inferred from correlational data. Thus, for example, if one finds a relationship between parent-child interaction about

consumption and the child's ability to price products accurately, the assumption is made that such communication focuses on prices. However, the child's ability to price products accurately may not necessarily develop as a result of family communications but may be due to a third variable (e.g., development of product desires), which can result both in greater awareness of product attributes and in child-initiated communication. The most perplexing measurement problem involves the need to establish *functional patterns* of communication and consumer behavior that cut across various discrete consumer orientations and socialization processes (McLeod and O'Keefe 1972). Measures focusing simply on time spent interacting with various socialization agents are not likely to produce meaningful results. Receiver-oriented categorizations of the agent's functions and ability to fulfill certain information needs combined with specific use patterns would seem to be the optimum strategy for measuring communication behavior (e.g., McLeod et al. 1982, McLeod and O'Keefe 1972).

Measures of the effects of socialization agents and antecedent variables, on the other hand, pose a rather different issue in that both relative and absolute measures can be used. Measures of relative effects of socialization agents can be assessed in terms of their intent, attitudes, and cognitions, by pitting the influencer's (agent's) orientations against the influencee's (learner's) orientations toward the object of communication. Thus, the emphasis shifts from the individual's orientation toward the object of communication (absolute measures) to co-orientation (relational measures), and from sampling individuals as units of analysis to sampling dyads, groups, or collectivities. Absolute measures, on the other hand, often consists of cognitive, affective, and behavioral outcomes measured in relation to some norm or expected direction. For example, learning about products (awareness) and developing skills at budgeting (behaviors) are used as unidirectional measures of effects of parent-child communications about consumption. When such measures are used, the assumption is often made that the agent's intention is to change the level of cognitions and behaviors to the desired direction.

Co-orientational assumptions must be checked before applying this measurement model. At times, intergenerational effects on consumer learning assessed using co-orientational variables are difficult to evaluate in terms of exactly the same elements of X (object of communication). Although it is very rare that both A and B would perceive exactly of same elements of X, some degree of similarity of their orientation toward the object of communication is necessary in order to apply the model sensibly at the co-orientational level. At times, the availability of symbols of X (often referred to as "codability") may hamper communication, as would "connotation," a term that describes variance between A and B in their respective usages of words to denote Xs (McLeod and Chaffee 1973).

Communication and influence effects on consumer learning may not only be in terms of "overlaps," in line with the co-orientational model, but also in terms of changes or developments of cognitive and behavioral patterns. For example, much of consumer socialization literature suggests that parent-child communications about consumption are related to the child's *development* of several cognitive and behavioral orientations about consumption (Moschis 1987). In addition, there may be other messages or cues that can be, often unintentionally, communicated from one person to the

other during the course of interaction. Thus, it is often the *effect* rather than the perceived intent of the communication that should be measured. Because of the several ways family members can influence one another, several *types* of indices of communication effectiveness are often recommended in assessing interpersonal communication and influence. For purposes of measurement, it is necessary to assess a set of attributes of the role-incumbents that are particularly relevant to that role, and to obtain corresponding measures of the same attributes on the role-aspirant group. The particular set of attributes to be assessed is a function of the particular role under consideration. Such attributes include values, beliefs, attitudes and specific behavioral acts.

In order to assess the degree of intergenerational influence, the development of indices of communality between role aspirants and the role-incumbent groups is required. The degree of communality between the two groups can be indexed by a number of measures. For example, Tannenbaum and McLeod (1967) suggested several indices, including similarity of factor structure, relative factor salience, difference in concept judgments using the D statistic, differentiation between concepts, degree of role identification, homogeneity of judgments, and meaningfulness. In the area of consumer socialization, Rossiter and Robertson (1979) used confirmatory factor analysis to assess the similarity of factor structures between mothers and their children.

One of the difficulties encountered in trying to demonstrate the effectiveness of socialization agents in teaching behaviors is that learning involves at least two stages: acquisition and performance (e.g., Comstock et al. 1978). Failure to perform a behavior previously observed does not mean that acquisition has not taken place (Bandura 1973). Unfortunately, it is often impossible to determine whether a behavior has been acquired unless it is performed. However, a behavior previously acquired may not be performed immediately, but later if or when the appropriate eliciting conditions occur. Developmentalists have referred to this phenomenon as a " sleeper effect," while sociologists have referred to it as "anticipatory socialization."

Because consumer socialization involves the study of specific agents and their effects, a measurement-related issue involves the decision regarding the time lag between interaction with these agents and learning of consumer orientations. Comparison between short-term and long-term effects suggests possible differences in the effects of socialization agents as a function of time (Moschis 1987).

In sum, measurement issues must address the question *what* to measure (content or criterion behavior), *how* to measure and *when* to measure consumer socialization processes and effects.

Reliability and Validity

Reliability and validity are necessary conditions for sound consumer socialization research, if knowledge about the area is to be systematically accumulated over time. Issues of reliability and validity are magnified when the researcher works with groups of people at extreme stages in their life cycle -- i.e. children and elderly, or from different cultural settings. This is because people respond differently to questions or questionnaires. Thus, for example, an instrument could be found to be reliable and valid when adult subjects are

used but it might be unreliable or invalid when applied to children and elderly.

Consumer socialization involves continuous adjustment to one's environment and learning new attitudes, values, and norms or modifying existing ones. Since not all orientations develop or change simultaneously, interrelationships among items expected to measure a particular construct are frequently low. Similarly, correlations of the same measure over time (test-retest reliability) are low as well because socialization involves the formation and change of orientations regarding a specific role. Thus, it is more likely to achieve higher reliability of constructs when working with subjects who are expected to have developed certain attitudes, values and behaviors than with subjects who are in the process of developing or modifying such orientations.

Another related problem that applies to both reliability and validity stems from the fact that responses to an instrument are likely to be significantly affected by the person's background characteristics. Factors such as race, social class and sex are likely to affect both reliability and validity. For example, while Rossiter's (1977) objective test for measuring children's attitudes toward television commercials was found to be highly reliable, analysis of the instrument by income level suggested significant differences in responses (Bearden *et al* 1979). Similarly, Allen and Chaffee (1977) found that the two-dimensional model of communication structures fits the black subculture not as well as it does the white subculture from which it was originally derived.

Differences in responses to the instrument across social groupings could be due to a number of reasons. First, socialization may not occur with the same rate within groups of a social structure. Second, different norms, values, and beliefs may be emphasized in different sub-cultures. Third, sub-cultural variables may affect the respondent's communication skills and even the quality and meaningfulness of responses. Finally, third variables (e.g., I.Q.) may be related to both a specific sub-culture and items making up the instrument (e.g., attitudes toward advertising).

The seriousness of several problems related to reliability and validity could be reduced if specific steps are taken. It appears that specification of the attitudes, values and behaviors that define the consumer role, or consumer behavior in general, has a lot to do with how persons from different backgrounds respond to measures of these variables. If the constructs and domains related to the focal variables are of nearly equal relevance to respondents, regardless of their background characteristics, reliability and validity should be improved. Second, data analysis by sub-culture might help us isolate differences due to cultural norms from differences due to measurement.

RESEARCH DESIGNS

The development of research designs appropriate to the study of intergenerational influences must deal with change over time and sequences of cause and effect (McLeod and O'Keefe 1972). Causal modeling using nonexperimental data gathered at a single point in time is one promising approach. When causal modeling is used, care must be taken in separating the effects of socialization processes whenever reciprocal causality exists. This can be accomplished in a number of ways including the use of instrumental variables and maximum likelihood estimates.

The ideal research design, however, is believed to be the panel design that has often been advocated but seldom used in consumer socialization studies. Using this design, data can be obtained from the person being socialized as well as from socialization agents such as parents. Over long periods of time the same respondents would again serve as data sources. A major advantage of this design is that it allows one to work strong tests of cause and effect relationships. In socialization studies, for example, parent-child correlations are often used as evidence of child's modeling of the parent's behavior, but may also be explained as reverse modeling -- i.e. the child's behavior influences the parent rather than vice versa (McLeod and O'Keefe 1972, Surlin *et al.* 1978). Cross-lagged correlation designs as well as causal modeling with and without lagged variables can be used with panel data.

Another issue deals with the appropriate sampling units. For example, one pressing need for research appears to be the need for studying the influence of family in the context of specific dyads, focusing upon specific pairs. Consumer socialization research (e.g., Moschis 1987) suggests that family influences have been examined only in the broad context of how parents affect the development of consumer behavior of their children. Ideally, research should address specific dyads and directions of influence such as mother-son, mother-daughter, father-son, and father-daughter. The study of family communications in the context of specific parent-child dyads may be useful in understanding the effects of specific interpersonal processes on the development of various types of consumer behaviors.

REQUIRED EVIDENCE FOR INFERRING CAUSALITY

Within the requirements for inferring causality known to researchers, one must show (a) correlation of the agent's with the influencee's consumer-related orientations, (b) time order of occurrence, and (c) elimination of other possible sources of influence. There are several issues surrounding the evidence of causality in the context of intergenerational influences.

With respect to agent-learner similarities of behaviors and attitudes which may be inferred from correlational analyses, the relationship does not necessarily imply causality. It is very likely that the reverse influence exists, or a simultaneous effect takes place. Furthermore, it is possible that the agent's influence may be in teaching norms and behavior which are not necessarily held by the agent.

Time order of occurrence is another condition which must be met. However, the issues here are: What is the necessary time lag before effects can occur? Does the acquisition/influence of certain consumer orientations require a greater time lag? Does influence vary over the life cycle and in different socio-cultural settings? Unfortunately, there is little theory or research to help us answer these questions.

The last requirement, elimination of other possible influences, poses the greatest challenge to researchers. Many of the intergenerational effects may be direct, while other influences may be indirect via third variables, or they may be mediated in the socialization process.

One other issue that might take a considerable amount of research data to answer deals with how the person's acquisition of consumer behaviors relates to the development of other types of orientations, and how they relate to specific social structures and social

systems. It is possible that consumer behavior is best understood in its relationships with other kinds of behavior as a dependent variable, and that consumer behavior may represent too narrow a scope for an adequate research program (McLeod and O'Keefe 1972). This would make both socialization processes and consumer behavior dependent upon the person's socialization into a more general role. For example, a fruitful area for future research might prove to be understanding the person's personality development throughout his life-span and how such development affects specific aspects of consumer behaviors. Similarly, changes in consumer orientations over the life cycle may reflect changes in the person's environment rather than effects of specific socialization processes and their antecedents. For example, one could check this assumption by developing global measure of the general adult public's behavior which could then be compared to those of the influencee's parents in producing certain effects on the learner's behavior.

SUMMARY

The study of intergenerational influences on consumer behavior is within the scope of the consumer socialization perspective. The consumer socialization approach not only presents a new way of studying consumer behavior, but it also reflects current thinking and trends in social sciences. However, given that the area is relatively new, there has been little data generated to make researchers aware of and address issues surrounding the process of studying consumer behavior using this particular perspective. It is hoped that this paper has raised the level of awareness of some key issues and has provided some direction for future research for achieving greater uniformity in methodologies used and improving the quality of research findings.

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Keyword Recognition: A New Methodology For The Study of Information Seeking Behavior

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Abstract

The traditional field and laboratory methodologies for the study of external information search behavior are reviewed. A new computer methodology, which reduces the structure placed on the search task, is introduced and its advantages and disadvantages are discussed. The results from a preliminary study suggest that this methodology is both a useful and feasible approach for the study of information seeking behavior. In addition, this computer methodology overcomes some of the problems associated with methodologies used in the past.

Introduction

Because of search behavior's importance in consumer behavior, public policy, and managerial decision making, it is one of the most important and heavily researched areas of choice behavior. Field studies dominated the early research in this area; however, many problems exist with survey methods used in these studies. Later research in the laboratory relied heavily on the information display board methodology, which overcomes many of the problems associated with field studies. Nevertheless, this method also has drawbacks. This study proposes a new computer methodology, a keyword recognition problem, that minimizes many of the problems associated with both the survey and the information display board methods, while offering significant advantages.

Past Methodologies

Field Studies. One of the most frequently replicated findings in field research is the apparent lack of information search by consumers, even when the purchase involves a large outlay of money (Dommermuth 1965; (Katona and Mueller 1955; Newman 1977; Newman and Staelin 1972; Udell 1966). These studies use many measures to capture information search behavior: (1) the number of stores visited, (2) the number of shopping trips before a purchase, (3) the amount of time taken in the store, (4) the number of information sources used, (5) the number of types of information sources used, and others (Katona and Mueller 1955; Newman 1977; Newman and Lockeman 1975; Newman and Staelin 1972). Most of these measures are used as surrogates for search behavior and, consequently, do not necessarily reflect the actual number of information bits received by the consumer. For example, the amount of information search represented by one visit to a store is unclear (Newman 1977). Also, field studies treat the sources of information equivalently, yet some of the sources must provide more information than others.

Newman and Lockeman (1975) cite additional limitations of the survey method: (1) the inability to capture the details of the search, (2) the consumers' limited responses to survey questions, and (3) the incomplete recall by the subjects. In an attempt to overcome these limitations, Newman and Lockeman employed a combination of survey-based and observational measures. They found that a low correlation existed between the survey-based and observational measures. Moreover, considerable search behavior occurred in the retail store, indicating that without the in-store observational measures, one would incorrectly

conclude that a consumer's search for information is limited.

Most of the field studies rely on consumers' self-reports about their pre-purchase information search. These self-reports were given anywhere from a few days to two years after the purchase. Yet in the Newman and Lockeman study, subjects could not accurately recall their in-store information search behavior, even a few minutes later. As well, subjects may favorably bias a self-report if they believe they are being evaluated. Given these limitations, the results from field studies in this area should be interpreted cautiously.

Laboratory Studies. As opposed to field studies, laboratory studies offer an opportunity to study information search behavior in a controlled setting. In a laboratory setting one is not forced to rely on self-reported data; that is, the actual information seeking behavior can be measured directly. Furthermore, more detailed data can be generated.

Most of the studies in this area have relied on the same behavioral process methodology, presenting information--usually organized in an attribute-by-brand matrix--through the use of an information display board (Jacoby et al. 1976). The subjects acquire information by exploring the brand/attribute cells that interest them. This methodology is easy to implement and is a substantial improvement over the post-purchase self-reports used in the field studies; that is, the board methodology allows information search behavior to be measured directly.

The information display board (IDB) methodology has led to a fruitful stream of research and variations in the basic methodology have appeared (Payne 1976a, 1976b). For instance, Hoyer and Jacoby (1981) computerized the task and expanded the 2-dimensional matrix into a 3-dimensional matrix by adding a source of information dimension.

Unfortunately, the IDB methodology, in all its forms, has some drawbacks. For example, Brucks (1984) argues that the board imposes a structure on a problem that in reality is often poorly defined; the buyer may not know how many alternatives are available or which attributes are important. Second, limited costs of search exist for the subject with the information display board. Third, in the real world such information is usually structured by brand. The board facilitates both processing by brand and processing by attribute. In addition, Arch, Bettman and Kakkar (1978) found that the task characteristics of a study can influence the search behavior of the subjects; that is, the information presentation format influences the information acquisition strategy. Given these limitations, it is not clear how closely search behavior with the information display board would reflect search behavior in a natural setting.

Brucks (1984, 1985) provides an alternative laboratory methodology--a computerized shopping simulation--that avoids many of the problems of traditional approaches. Like the IDB approach, this method allows actual search to be measured. However, unlike the IDB methodology, subjects can generate their own questions and attributes without having a structure imposed on their choice domain. The subjects access a

database by typing questions into a computer terminal, while a video camera is filming their computer screen. A hidden human interpreter watches a computer monitor and responds to the subjects' questions by typing in an identification code associated with the correct preprogrammed response. This method has advantages over the traditional methods; specifically, the unstructured choice has greater ecological validity than the IDB methodology. However, from a practical standpoint, this approach is difficult to employ because subjects must be run individually.

Keyword Recognition Approach: A New Computer Methodology

The keyword recognition program, as with the video monitoring approach, also avoids an unrealistic structuring of the choice domain. However, this approach is an artificial intelligence technique for interfacing with a user. Communication between a human and a computer using this technique is based on a few simple ideas. Subjects directly type into the computer their requests for information. The text is first scanned for keywords. When keywords are identified, the sentence is transformed according to a rule that is associated with the keyword and, based on the rule, the computer replies back to the subject. This is the concept behind computer programs that use natural language; however, in practice the procedure is much more complex (see Weizenbaum 1966). The most insurmountable obstacle with a natural language program is generating all the possible rules for multiple-key word sentences.

An example might help to illuminate the problems involved with natural language programs. Say, for instance, that a subject wanted to find the gas mileage for Car A. The first difficulty would be generating all the possible ways that this question could be asked: 1) What is the gas mileage?, 2) What is the gas mileage per tank full?, 3) How long can this car go on a tank of gas?, and so on. The next problem would be creating rules for all of the different combinations of keywords. Rules would have to be generated for each basic sentence structure and for all of the different combinations of keywords.

Nevertheless, this keyword recognition approach can be made feasible by limiting the number of sentence structures that are used. If the subject is limited to using, for example, only one out of five sentence structures ("What type of _____ does Car A have?") and only one to three keywords used simultaneously, then the keyword program becomes feasible. With this constraint placed on the question format, it is also possible to use the keyword recognition approach on a micro computer. It is still necessary, however, to go through a lengthy process of generating all of the possible keywords and synonyms. Furthermore, one should also consider likely misspellings (for example, 'gas milage'). But this approach has several advantages over the IDB approach. The subject is still free to generate any questions that he/she wants to ask. The keyword recognition program does not structure *what* the subject asks, only *how* the questions are asked. It does not force subjects to search by either brand or attribute; that is, the task structure does not dictate the search strategy.

With any computer methodology, it is important to include warm-up exercises for the subject. On the one hand, a subject may fear working on the computer. The warm-up session should alleviate these fears. On the other hand, a subject may be intrigued by the novelty of

the computer. In this case, the warm-up session should allow some of this novelty to "wear-off". An example of a warm-up exercise is presented in the next section.

Both Brucks' methodology and the new methodology offer several advantages over the traditional process methodologies. For example, it was found in debriefing subjects that they were naive with respect to the computer's capabilities; that is, the computer allows for an unobtrusive trace of the unsuspecting subjects' search processes. In addition, since the subjects do not believe their actions are being traced, they are less likely to monitor themselves and alter their behavior. Similarly, the use of the computer should diminish the subject/experimenter interaction and, thus minimize the potential threats to construct validity--specifically, evaluation apprehension and experimenter expectancies (Cook and Campbell 1979). By controlling experimental conditions that normally would vary (the facial expressions and the tone of the questioner, for example), the computer also aids in promoting a consistent experimental setting.

Many costs of information search exist: time, money, frustration and others. With these computer methodologies it is easy to create a cost of information search. Time delays can be programmed into the computer. Although time is not the only cost of search, it does represent an actual cost of search.

The computer methodologies do have problems. There is no way to control or measure internal search. (This criticism can also be made of the other methodologies.) As well, the extent to which behavior in the laboratory reflects behavior in a natural setting is not clear.

Theoretically, both computer methodologies are superior to the information display board methodology because they reduce the structure placed on the task. From a practical standpoint, the major advantage of the keyword recognition program is that the data collection is easier, faster, and cheaper. With the high availability of personal computers, subjects can be run concurrently, thus increasing statistical power.

Using The Keyword Recognition Program: A Preliminary Study

The keyword recognition program was tested empirically in a study of information seeking behavior for automobiles (author). This was a fairly strict test of the methodology. An automobile is a complex product with hundreds of attributes. (About 200 attributes and over 750 synonyms were stored in the keyword data base). If the methodology can be used for an automobile, then it should also be viable for the simpler products with fewer attributes.

Description. Upon entering the study, subjects were seated before a computer terminal. All of the directions and the warmup exercises were already programmed into the computer. The subject merely had to strike any key to read the next screen of instructions. The subjects first engaged in a warm-up exercise until they were comfortable using the computer. See Exhibit 1 for the actual warm-up exercise.

When the subjects understood how to use the computer, they advanced to the actual study. The computer procedure used in the warm-up exercise paralleled the procedure in the automotive study. (See Exhibit 2 for the directions and an example of an actual computer screen in the automotive task.)

For example, if the subject wanted to know the gas mileage for car A the subject had to enter a "3" (then 'What type (kind) of _____' appeared on the computer screen), type in "M.P.G." or a synonym, hit enter (then 'of car _____' appeared on the screen), and, finally, type in the letter "A". If the subject used a keyword that was not recognized by the program then the subject received a message instructing him/her to ask the monitor for a synonym that the computer would recognize.

An Evaluation of the Methodology. Several criteria were used to determine the viability of this methodology. First, the subjects must understand the task and feel comfortable using the computer. A four-item scale measured task understanding (Cronbach's coefficient $\alpha=.72$). From an examination of the scale mean, it appears that subjects did understand the task. On a 7 point scale, '1' meaning the subject understood the task, the mean was 1.93 with a standard deviation of .91 (see Exhibit 2).

In addition to understanding the task, subjects needed to be involved in the search. Automobiles are a high involvement product so it was important from a theoretical standpoint for subjects to be involved in the task. Task involvement was measured using a five-item scale (see Exhibit 2). The coefficient alpha for this scale was .76. From an examination of the mean, subjects exhibited a high level of involvement (mean = 1.88 and standard deviation = .81).

The third criterion used to evaluate the methodology was an analysis of the number and type of errors made by the subjects. The first measure of errors was the average number of errors; that is, any request made by a subject that was initially unanswered fell into this category. This measure was the total number of unanswered questions divided by the total number of requests made.

The average number of errors was broken down into three subcategories: typographical errors, "okay" errors, and "bad" errors. Typographical errors included such errors as mistyped words, misspelled words, accidental carriage returns,... These requests were considered normal, unavoidable errors, which do not reflect poorly on the methodology. The "okay" errors were requests that were made, went unanswered, but were subsequently answered. Either the subjects asked the monitor for a synonym or the subjects thought of a synonym by themselves. Again, these errors were not detrimental to the methodology because the subject was able to get the desired information. The "bad" errors were any requests for information that went unanswered. Although these "bad" errors are not detrimental to the methodology per se, they did reflect an inadequacy in the data base; and, if the data base is incomplete, then the methodology is limited. As well, the subjects could become frustrated by their inability to ask questions and this frustration could alter the results of the study.

There were thirty-three different words that were not recognized by the computer program yet were valid requests. Many of these words were synonyms for the attributes already stored in the data base; for instance, "transmission" was stored in the data base with several synonyms, however, the synonyms "gears", "gear shift" and "five gears" were not stored. Some of the words should have been in the data base but were overlooked: "gas tank," "tank," and "muffler." Finally, the majority of "bad" errors were unusual combinations of words,

which may have been difficult to generate *a priori*: "color scheme," "color interior" and "maintenance needs."

The measure of the number of bad errors is conservative measure. For example, a subject could have used five synonyms to ask about the same attribute and this would have been counted as five bad errors, when the subject had only failed to discover the value of a single attribute. Nevertheless, five unanswered questions could certainly lead to frustration.

The number of requests that were mistakes was 15.4% of the total number of requests. Of this total, 8.0% were typographical errors, 3.4% were "okay" errors and 4.0% were "bad" errors. Overall, this rate seemed to be an acceptable level of nonresponse errors given that this was the first use of the methodology and a complex product was used. Of course, without a baseline number of errors, absolute acceptability cannot really be determined. It should be noted, however, that in subsequent studies the error rate would decrease if the unrecognized words were added to the data base. As well, if this methodology was used with less complex products then the error rate should decrease substantially. Clearly initial results are good enough to warrant additional exploration of this methodology. However, additional empirical research is needed to explore the limitations of this methodology.

Conclusions

Some of the field and laboratory methodologies for the study of information acquisition were reviewed. A new computer methodology was introduced, which overcomes many of the problems associated with the past methods. This paper argues that the keyword-recognition approach, like the computerized shopping simulation approach, reduces the unrealistic structuring of the choice domain. Furthermore, a preliminary study indicates that the new approach is feasible.

Future studies might consider using the IDB and computer methodologies to study the same phenomenon. It would be useful to compare results from these methods. For example, because the computer methodologies do not impose a structure on the search task, one would suspect that data generated from the computer methodologies on the subjects' search strategy would correlate more with actual behavior. However, a fundamental question that all laboratory research must face is do the results generated in an artificial, controlled environment match the results generated in a natural setting. Clearly some of the artificial dimensions of the lab context, such as being unable to actually see and use the product, must impact the behavior exhibited by the subjects. As well, only one source of information is employed, yet realistically subjects rely on a variety of information sources.

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Exhibit 1 Computer Warm-Up Exercise

Before you can begin the automotive task, however, there are two warm-up tasks to be performed on this computer. These tasks will help you learn how to use the computer so you will feel at home on the terminal. Also, you will learn all that you will need to know in order to do well on the automotive task. So, please, try to do a good job on the warm-up task because it is very important that you understand the computer and feel comfortable using it before going on.

The first task is structured exactly like the automotive task and has the same rules. This warm-up task, however, has to be in an area that is not related to cars--we do not want you to learn anything during the practice session that might influence your answers during the automotive task. We chose an area that we thought most students would know a lot about: dogs and apartments.

The second practice task, on the other hand, will give you practice answering the questions that follow the automotive task. You will read a true story about a dog and then answer questions about the story. (This second practice task was actually the induction of the independent variable.)

If at any time during the session you have questions please raise your hand and the monitor will help you. When the monitor comes, please ask your questions very quietly so as not to disturb any of the other students. Finally, please do not talk with any of the other students during the task.

Let's begin the first practice task!

PRACTICE 1--DOGS AND APARTMENT LIVING

Please pretend that you have just purchased an apartment building and you must set a new pet policy. Three of the renters have dogs and you must decide which of the dogs, if any, can stay. You can ask as many questions as you like, but then you must decide how well suited each dog is to live in your apartment complex.

There are only a few simple rules to remember.

- 1.) You can only use the formats below to ask questions. (These formats are the same as those used in the car study, but you do not have to memorize these formats. They will be at the top of the screen during the task.)
 - 1 - What is (are) the ____ of dog ____ (A, B, or C)?
 - 2 - What is the cost of ____ for dog ____ (A, B, or C)?
 - 3- What type (kind) of ____ does dog ____ (A, B, or C) have?
 - 4- Where is (are) the ____ for dog ____ (A, B, or C)?
 - 5 - Does dog ____ (A, B, or C) have ____?

- 2.) You may only ask about one dog at a time and you may only ask about one piece of information at a time.
- 3.) You can not ask any questions about the owners or questions that are opinions--but you can assume that the information that you are given is accurate.
- 4.) You can only use the words provided in your folder to fill in the formatted questions. Also, do not use articles: a, an, the, this, that, these, or those.
- 5.) You must use capital letters. The 'caps lock' button has already been set--if you have any problems raise your hand.

A copy of these rules can be found next to the computer in a folder. In addition, there is a list of things that you can ask in order to find out if each of the dogs is suited to apartment living. (Attributes were not provided in the automotive study.) Why don't you look at the rules and the list before continuing.

These are the ONLY things that you can ask during the dog task:

SIZE
NOISE
BARKING
TRAINING
HOUSE TRAINING
PERSONALITY
FUR
FLEAS
LIVING QUARTERS
REPAIRS

If you look at your list of formats you can see that some of these words above make sense with some of the formats while others do not. For example, 'What is the size of dog A?' makes sense, but, 'Where is (are) the size for dog A?' does not make sense.

If you had used format #4 with 'SIZE' you would have received a message like this:
Please check with another format.

This statement means that information exists but with another format.

Here is another message that you might receive when 1) no information is available, or 2) there is information available but it is necessary to use another synonym--a word that means the same thing (for example, 'NOISE' instead of 'BARKING').

Information may not exist for this feature. Please try to use a synonym or ask the monitor for help.

Finally, there are two other messages that you might receive.

If you asked 'What is the training of dog C?', the answer would be:

Please be more specific

So instead, you might ask 'What is the house training of dog C?'

If you asked 'What type of personality does dog B have?', the answer would be:

This is an opinion.

You could then ask if the dog barked, which would tell you something about the dog's personality.

After the dog task starts, you will have to carefully type in your identification number. The computer will then ask you:

WOULD YOU LIKE TO FORMULATE ANY QUESTIONS? (Y/N)

If you type in 'Y' you will be able to ask questions, but after each question, the computer will again ask you this question above to make sure that you still want to ask another question. When you are finished asking questions and feel comfortable using the computer type 'Y' and the next part of the task will appear.

While you are asking questions, the five formats will always appear on the screen. To ask a question simply (1) type in the format number that you would like to use, (2) fill in the blank with a word from the list, (3) hit the enter button, and (4) type in one of the letters of the dogs (A, B, or C). Read this paragraph again to make sure you understand.

Conceptual Underpinnings for the Use of Group Interviews in Consumer Research

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Abstract

The authors provide two justifications for the use of focus groups in consumer research. First, the kind of generalizable knowledge which qualitative research can offer is discussed. This is distinguished from the kind of generalization which survey research permits. Second, the advantages of group qualitative research over individual qualitative research are considered. It is shown that the biases created by interpersonal processes in groups may actually be advantageous to the marketer. The result of the paper is a sharper distinction between what focus groups can and cannot do for consumer researchers.

Introduction

It is our impression that a great deal of confusion continues to surround the topic of focus groups. Although the technique has long fascinated researchers, and is now very popular, the justifications typically offered for its use are not always persuasive. The same holds true for the criticisms commonly directed against the technique. What is lacking is a sound basis for judging when the group interview is the technique of choice, and when it ought to be avoided. While the seminal article by Calder (1977) made considerable strides in this direction, the subtleties of his treatment have not always been heeded. Too often today the choice to use or eschew focus groups remains based on tradition, fashion or opinion, rather than on a solid analysis of the technique's true strengths and weaknesses.

The purpose of this paper is to contribute a better theoretical perspective on what a focus group really does. Two questions have to be disentangled in order to address this issue. First it is necessary to contrast the possible contribution of *qualitative* as opposed to *quantitative* research. While the limits of qualitative research are well known, less attention has been paid to its unique strengths. Second, it is necessary to understand how *group* depth interviews differ from *individual* depth interviews. Because focus groups are not the only form of qualitative research, a justification of qualitative research alone would be insufficient. We will argue that interpersonal processes known to characterize the group setting may actually assist the marketer. Rather than contaminating the results, these group processes can strengthen the inquiry.

The supposed limitations of qualitative research are well-known. Most qualitative studies acknowledge these limits with caveats to the effect that the findings are not projectable, should be taken as suggestive only, and cannot stand on their own. Market research texts derive these limits in a rigorous, scientific fashion, pointing to the consequences of biased sampling procedures and inadequate sample sizes. But this rigor disappears when discussion turns to the strengths of qualitative research. One hears only that the technique yields "deeper" and "richer" information. This is not an adequate defense, particularly once it is realized that hundreds of millions of dollars are spent annually on qualitative research (Goldman and McDonald 1987). We think that the strengths of this technique should be conceptualized in the same rigorous manner as the

weaknesses. Calder (1977) was among the first to attempt this task.

Calder's Defense of Qualitative Research

Calder's (1977) article did much to challenge accepted assumptions about focus groups. Although our treatment of the matter differs from his, a review of his contribution will provide a starting point. Calder argued that a focused group discussion is neither a proto- nor a pseudo-survey, but a different creature altogether, with different aims and assumptions. A key concept in his treatment is the distinction between everyday knowledge and scientific knowledge. Everyday knowledge is represented by consumers' own understanding of, and explanations for, what it is they do when consuming. Calder observes that at the present time, the everyday knowledge held by consumers has a claim to validity that is at least equal to that of the scientific knowledge produced by the research community. The phenomenological type of group provides the means to capitalize on this insight. Unlike the clinical approach, where the analyst's command of depth psychology enables him to penetrate beyond consumer knowledge, or the exploratory approach, which uses the group discussion merely as a trigger to generate scientific hypotheses, in the phenomenological approach the purpose is simply to uncover the everyday knowledge that consumers possess.

In Calder's view, it makes little sense to talk about phenomenological focus groups as a preliminary research effort yielding tentative findings that must be confirmed by survey research. The two techniques seek *different kinds of knowledge*: the one the everyday knowledge of the consumer, the other the scientific knowledge of the researcher. Surveys cannot confirm focus groups in any strict sense because they do not and cannot uncover the same types of knowledge. However, Calder leaves unresolved the question of the generalizability of a focus group study, saying only that, "The best way to generalize ... is to conduct additional groups" (p. 361).

Although indebted to Calder's treatment of these issues, (in particular his suggestion that focus groups uncover a different kind of knowledge), we believe that a more satisfactory answer can be given to the question of generalizability. And in fact, understanding the kinds of generalizability which it is possible for focus groups to attain is key to understanding the contribution of qualitative research in general. Moreover, such an analysis will also pinpoint what it is that focus groups *cannot do*, and the kinds of research objectives which are *inappropriate* for this tool.

Two Kinds of Generalization

Imagine a company with the following concerns:

- The management of Nuphone Corporation wants to explore consumer reactions to an electronic telephone product currently at the concept stage.
- They need to understand the nature of the appeal that electronic phones hold, and any fears or negative perceptions that the new technology involves.

- In general, they want to know how electronic phones are perceived in comparison to more conventional phones.

These are the kinds of questions often addressed with qualitative research: questions concerning likes and dislikes, reasons and motives, needs and expectations. The typical justification for the approach is that qualitative research, in the form of focus groups, can provide "deeper and richer" insights into these matters. We think a much more convincing and specific justification can be given. Our argument is straightforward: 1) that a researcher in the situation described above could be interested in either of two distinct *types* of generalization; and 2) that one of these types can be achieved through qualitative research, while the other cannot. We shall refer to a Type 1 generalization (which qualitative research can obtain) as an "*existence*" generalization, and to a Type 2 generalization as an "*incidence*" generalization.

An examination of Exhibit 1 will help to clarify these matters. One research objective could be to *identify* all the major reasons that motivate the acceptance or rejection of the electronic phone (a Type 1 generalization). These would include findings to the effect that the ring of an electronic telephone is more annoying to consumers than the ring of an ordinary phone, or that electronic phones are considered more prone to breakdown. The second objective might be to discover the *incidence* of any of these perceptions in the population (a Type 2 generalization). Here the answers would take the form of, "Two-thirds of the consumers in this research compared the beeping sound of electronic phones unfavorably to the ringing of an ordinary phone," or "Fewer than one in ten consumers were concerned about the durability of their electronic phones."

Most of the standard critiques of the focus group discussion concern the inability of this technique to perform the second type of generalization with any adequacy (Advertising Research Foundation 1985; Seymour 1987; Wells 1974; Yoell 1979). Researchers comment on the small sample sizes in most group studies, the lack of random sampling, and the

susceptibility of respondents to group pressure. We completely agree with this critique. We hold focus group studies to be incapable of providing accurate estimates of the incidence in the population of specific likes, reasons, or motives. And, we recognize that many market research studies are crucially concerned with the second type of generalization. An example would be segmentation analyses where one must estimate the relative size of several different target groups.

Where we part company with existing commentary is in our interpretation of this limitation. We see it not as a characteristic flaw of the technique, but simply as a warning about how not to use the technique. As any practicing moderator will attest, it is a warning that bears repeating. Most management education is biased toward quantitative techniques, and it is a rare client, new to focus groups, who can resist the temptation to state qualitative findings in numerical terms: "Five of the six groups were solidly in favor of the concept," or "Six out of ten group members agreed that the product was worth more than \$100," or "Less than 10% of the respondents were indifferent to the key feature developed by our engineers." Any such conclusion from a qualitative study is unwarranted. This is not so much because it belies what actually happened in the group, but rather, because it suggests a kind of generalizability that cannot be obtained from qualitative research.

The danger in this critique is that it obscures the contribution that qualitative research *can* make, which rests on the kind of generalization which *is* possible with focus groups. The proper task for qualitative research concerns the first type of generalization: the identification of those responses that *do exist* among consumers. Here the research objective is very different; it is not to determine *how many* people dislike the ring of an electronic phone, but *whether or not* there are any consumers who dislike this ring, and the kind of reasons they give in explanation of this reaction. The outcome of the research project is not a judgement of how frequent some particular response is, but a listing and discussion of those responses that did occur in the groups. In other words, groups yield testimony to the effect that, "These

EXHIBIT 1
TWO TYPES OF GENERALIZATION STEMMING FROM A FOCUS GROUP STUDY

Type 1 (Existence)	10%	20%	30%	Type 2 (Incidence in population)				80%	90%	100%
	40%	50%	60%	70%						
Response A										
Response B										
Response C										
Response D										
Response E										
⋮										
⋮										
⋮										
Response K										

In a Type 1 generalization, the set of consumer responses (A to K) unearthed in the group discussion is held to reflect the set of responses (A* to K*) that actually exists in the population at large.

In a Type 2 generalization, the incidence of some particular response in the group (expressed as a percentage of respondents) is held to represent the incidence of that response in the population as a whole (again, expressed as a proportion).

are the kinds of things that consumers care about when they make purchase decisions for electronic phones." In evaluating the capabilities of qualitative research, the crucial question becomes: How well does the set of consumer responses generated *in the group* reflect the set of responses that actually characterizes consumers in general? The task now is to generalize from the set of ideas occurring in the group to the set of ideas that exist in the population, and not from the number of people holding a specific idea in the group to the number holding that idea in the population.

Given four assumptions, this task appears to be well within the capabilities of a typical focus group study. The first assumption is that with regards to most consumer issues, there are a relatively small number of characteristic responses, on the order of a dozen. In other words, there are only so many reasons why one might like or dislike an electronic phone product. (Here one recalls Fishbein's and Ajzen's (1975) contention that most actions will have five to nine salient consequences.) The second assumption is that most group members will be aware of, or capable of, more than one response to a product issue under study. The third assumption is that respondents in the group are in fact members of the population of consumers that one wishes to study. (Note that the group members do not have to be randomly or systematically sampled from that population to fulfill this requirement.) The final assumption is that respondents are recruited independently of one another. Although this does not guarantee a heterogeneous group that will reflect the diversity in the population, it at least makes an excessively homogenous group unlikely.

Granting these assumptions, the question about Type 1 generalizability can be rephrased as, "How likely is it that four groups of eight people each, talking for two hours, will touch upon all dozen motives for purchasing an electronic phone?" Although this question has not been addressed by any empirical work, intuitively the answer would seem to be, "Very likely." True, the respondents have not been sampled randomly; but even so the odds remain very much against bringing together thirty-two people, everyone of whom is unaware of several characteristic reasons for liking or disliking an electronic phone. Yes, some group members may dominate interaction and sway others to their views, but it is another matter altogether to claim: 1) that all four groups will fall prey to such individuals; 2) that these dominant members will actively suppress responses, rather than simply producing the appearance that a majority favors their views; 3) that the dominant members will suppress *the same* responses in every group; and, 4) that all of this will occur despite the efforts of a skilled moderator working to prevent such an outcome. Similarly, it is a fact that conformity pressures do operate in groups, that respondents may attempt to please the moderator, and that the moderator may bias the group. And, all of the above factors destroy any hope of estimating the incidence of any of the dozen reasons in the population at large. But, none of these biases and limitations would seem potent enough to cause the complete suppression of any reason that is a *common* occurrence among consumers. ("Common" might be defined as held by 20% or more of the population.) In which case, one must conclude that focus group studies do permit Type 1 generalizations.

At this point someone might object that we have "burned the village in order to save it." If qualitative

group research can truly say nothing about incidence; if all such research can provide is the assurance that the reasons discussed in the group do operate among consumers at large; then, how valuable is the technique? Here it helps to remember that although there may be only a small number of reasons for liking or disliking electronic phones, there can be no assurance that the product planners for Nuphone Corporation are aware of all these reasons. Moreover, there can be no guarantee that the reasons the Nuphone product development people do have in mind bear much resemblance to what consumers actually feel. Although one may be limited to discovery of the occurrence or absence of a consumer response, such knowledge can be of great benefit.

It is also the case that group qualitative research is not so limited in these matters as individual interviews. As the next section will show, some rudimentary grasp of the relative incidence of certain ideas *can* be gained through group interviews. Group discussions can at least separate common from idiosyncratic consumer responses. Several distinctive properties of the group environment will be seen to confer this advantage.

Group Versus Individual Interviews

The goal of qualitative research is thus to identify consumer reactions that do exist, and not to determine the incidence of these reactions in any larger population. However, the focus group is not the only qualitative technique that can achieve these goals. Why bother to interview consumers in a group when one could just as well talk to them individually? Wouldn't it be better to avoid altogether the potential for social influence, conformity, and undue dominance by certain individuals? If nothing else, consider the degrees of freedom that are sacrificed when consumers are combined into groups. Thirty-two consumers interviewed individually would allow for thirty-two different reactions to emerge, uninhibited by the presence of other consumers with their own agendas. The same people interviewed in groups of eight would yield only four degrees of freedom. As stated earlier, a justification for qualitative research is not sufficient to be a justification for focus groups.

Only if groups convey some unique advantage can the risks of social influence and conformity pressures, and the loss of degrees of freedom, be justified. Two arguments in favor of group over individual interviews can be identified. The gist of each argument is that group processes *do* bias the outcome in terms of the information gained from the research; but, that this bias is actually useful because it works in a direction that *enhances* the quality of this output. In brief: 1) groups will spend more time discussing ideas that are common to many consumers; and 2) group interviews, in comparison to individual interviews, minimize the role of the researcher/interviewer. These points will be developed to show the unique benefits that accrue from group interviews.

To begin, assume that there are only three types of thoughts about any given element of a group discussion topic: 1) widely shared thoughts (those that just about everyone harbors); 2) segment thoughts (those that are specific to a given segment); and 3) idiosyncratic thoughts (those that are unique to a given individual). These thoughts are depicted in Exhibit 2 in terms of the idea structure that would exist in an idealized

EXHIBIT 2
THOUGHT STRUCTURE IN AN IDEALIZED FOCUSED GROUP

	IDEAS →															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Respondent 1	W	W	W	W	S	S				I						
Respondent 2	W	W	W	W	S	S				I						
Respondent 3	W	W	W	W	S	S					I					
Respondent 4	W	W	W	W	S	S						I				
Respondent 5	W	W	W	W			S	S					I			
Respondent 6	W	W	W	W			S	S						I		
Respondent 7	W	W	W	W			S	S							I	
Respondent 8	W	W	W	W			S	S								I

Where:

W = A widely shared idea that is held by just about everyone

S = Segment specific idea that is held by just about everyone in a given segment

I = Idiosyncratic idea that is fairly unique to the individual

focused group. However, it should be realized that the idiosyncratic ideas are certainly not restricted in any real setting to one per individual, as we have shown in the idealized case. Rather, it is probable that the idiosyncratic ideas, for any one individual, actually outnumber the common ideas.

Thoughts Are Not Expressed at Random

We hypothesize that in a focus group discussion, participants will not bring up their ideas at random. Rather, they will tend to bring up first those ideas that they feel are common to other members of the group. As discussion continues and the widely shared ideas are exhausted, some of the segment level ideas will tend to emerge, while individuals continue to suppress what they feel are more idiosyncratic thoughts. We hypothesize, on the other hand, that during an individual in-depth interview (particularly one characterized by probes such as, "Anything else?"), respondents will be much more likely to bring up their idiosyncratic ideas. In fact, the idiosyncratic ideas may tend to come forth early and cause the common ideas to be missed by respondents.

Another group dynamic at work is the "tag along" comment (or nod of agreement). When an idea is brought up in a group, another individual will often encourage this behavior (either explicitly or implicitly). Thus, no matter what ideas are mentioned, the ones that become discussion points tend to be the shared ones. The idiosyncratic points again get washed out of the process. Contrast this to the individual in-depth interview where interviewer bias must be guarded against. In that case, any type of idea can come forward with equal probability.

Limitations on airtime have a similar effect. During a two hour focus group with eight people, if each person gets a fair share of speaking time, the total allocated to each person would be fifteen minutes. The rest of the time, that person is evaluating what others are saying and contemplating what he/she should add to the conversation. In the individual interview, the respondent is just left to roll along, with one idea leading to another, save for general redirection by the interviewer to the topic under discussion.

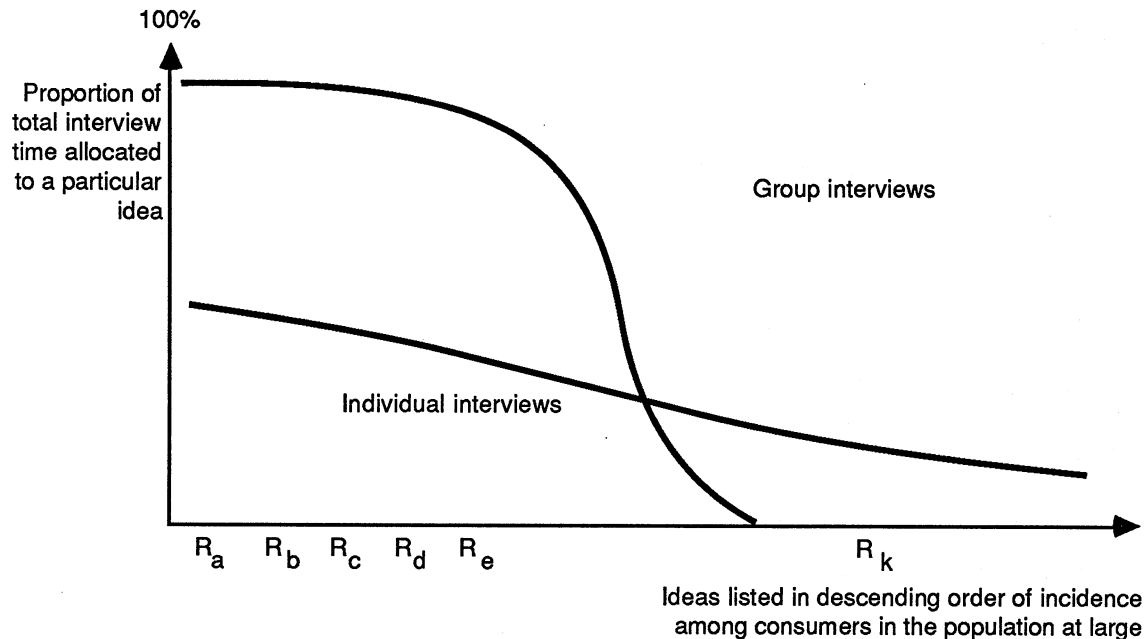
Differential Sampling of Ideas

Putting these notions together, we arrive at the diagram in Figure 1. This relaxes the strict dichotomies

of Exhibit 2 and grants the fact that ideas exist along a continuum of frequency in the population. The vertical axis in Figure 1 indicates the proportion of the total interview time devoted to a specific reaction, motive or other consumer response. This vertical axis describes an observed variable, and refers to all the interviews conducted within a given study. Airtime is assumed to reflect the depth and detail of the information gathered on any particular response. The horizontal axis orders ideas by their true (unobservable) incidence in the population of consumers, with ideas common to many people arranged to the left, and ideas held by few people, or idiosyncratic to one person, arranged to the right. The lines should be imagined as connecting a finite number of points, each representing a distinct consumer response to the product under discussion (i.e., a specific reaction to the sound made by electronic phones in comparison to regular phones). As shown by the graph, we argue that groups devote much less airtime to ideas that are relatively idiosyncratic. By contrast, while individual interviews will unearth a greater number of distinct consumer responses than will groups, a higher proportion of these responses will be idiosyncratic. The assumption bears repeating that airtime is monotonically related to the depth and detail of the discussion of the idea.

It should be apparent that the graph supports not an argument that groups are *ipso facto* better, but rather, the position that groups are best for some things while individual interviews are best for other purposes. The graph is consistent with the findings of Fern (1982), one of the very few studies to conduct an empirical comparison of group and individual interviews. Fern found that consumers working individually produced more ideas in an idea generation task (ways to recruit more women into the armed forces). Previously psychologists had come to the same conclusion in research on brainstorming: a given number of individuals will produce more ideas than the same number of people combined into groups. This finding makes intuitive sense if one considers the degrees of freedom argument (thirty-two people working independently versus four groups of eight), and the limits on airtime available to any one person in a group.

Figure 1
HYPOTHETICAL ALLOCATION OF DISCUSSION TIME AMONG IDEAS
IN GROUP VERSUS INDIVIDUAL INTERVIEWS



There are obviously a number of circumstances where marketers would desire the greatest possible diversity of consumer response, and the greatest number of distinct ideas. One thinks of the idea generation stage of the new product development process. Individual interviews are recommended here (McQuarrie and McIntyre 1986). But in many other cases, what marketers desire is not the one-of-a-kind reaction, or the unique perspectives of individual consumers, but the representative response: the reason or motive that is characteristic of many consumers. If it is true that group discussions tend to concentrate on ideas shared by most of the members present, then this structural bias could prove very valuable. Group discussions would serve as a filter that naturally works in the direction the marketer desires. Note that we do *not* argue that individual interviews will miss or totally overlook common perceptions or reactions; in fact, at the global level, we would presume that both techniques would be capable of identifying the same set of three or four very prevalent ideas.

The case for group interviews thus rests on the fact that marketers are most often concerned not with individuals but with market segments: homogenous groupings of individuals. Under these circumstances the idiosyncratic reactions of an individual consumer are of little value. In fact, the tendency of individual interviews to unearth reactions which are *unique to the respondent* can be seen as a negative feature. When qualitative research is done, the research sponsor may have no prior knowledge of what is and is not a common idea among consumers. The possible deleterious consequences of relying on individual interviews in this situation can be developed with reference to Figure 1. In terms of the horizontal axis, in one-on-one interviews the proportion of unique ideas to the total number of ideas identified will be high. The danger is that the

researcher will be misled into thinking that certain of these ideas are representative or typical when in fact they are not. With reference to the vertical axis, note that the slope of the frequency counts is much flatter for individual interviews than for groups. The difference in frequency counts between ideas which are truly common and those which are relatively idiosyncratic is much less. The danger again is that the results of the research will not clearly distinguish between ideas which represent basic consumer reactions to the product, and ideas which are relatively unusual, specific, and of limited relevance to marketing strategies.

By contrast, the slope of the group line is much steeper. Hence, the sponsor has some assurance that ideas which dominate the group discussion will in fact prove representative of widely shared reactions. Thus, although incidence generalization from groups is not advisable, groups should enable one to make gross distinctions between common and idiosyncratic consumer perceptions. Of course, it remains the case that a notion which occupies a large amount of airtime in the group may prove to characterize only 20-25% of the consumer population; and similarly, that a notion which receives a moderate share of airtime in the group is actually the single most common consumer response in the population at large. As argued earlier, no precision is possible in the estimate of incidence when a qualitative technique is used. But when *group qualitative* research is done, one can be assured that the ideas which dominate the group discussion are all of common occurrence. In our judgement, this is the signal advantage of group over individual qualitative interviews.

The Polarization Phenomenon

In the preceding we have presented a conceptual analysis in support of group interviews. The propositions are graphically represented by the two lines

drawn in Figure 1. While it should be possible to test these propositions, we know of no empirical studies that directly address the matter. However, there is a long tradition of research on group dynamics in social psychology which indirectly supports our formulation. The key phenomenon which led us to hypothesize the relations shown in Figure 1 is known as *polarization* (Burnstein and Schul 1983). In earlier research polarization in groups was studied under the heading of the "risky-shift." It had been found that a group would tend to make riskier decisions than the average level of risk acceptable to individuals within that group, as determined by measures taken prior to the group discussion. In later research, it was also found that groups would sometimes make more conservative decisions than the average of the individuals in the group. The key in both cases is that the group tended to exaggerate whatever tendency had preexisted among the set of individuals comprising the group. If risk takers predominated, the group made an even more risky decision than could have been predicted by knowing the number of risk taking individuals; and if risk-averse types predominated, then the group made a more cautious than predicted decision. In other words, group discussions tend to exaggerate whatever pre-existing tendencies characterized the majority of people in the group. At the same time, minority views tend to be suppressed.

Polarization, in this first sense of the word, thus operates to protect the research sponsor from being distracted by ideas that are idiosyncratic to individual consumers. The ideas most likely to dominate a group discussion are those shared by most of the people in the room. (This factor, of course, is what makes groups an inferior technique for idea generation.) Ideas which characterize only one individual tend not to receive much airtime, either because people self-censor these contributions, or because the group does not pick them up.

But there is also a second sense of the word polarization which is relevant here. This is polarization within the group, as originally discussed by Bales and Cohen (1979), and developed for this context by Goldman and McDonald (1987). A structural property of groups, in Bales view, is that coalitions will tend to form among like-minded individuals, creating sub-groups within the group. A unification dynamic draws together any two or three or four members who are somewhat similar to one another, and, a polarization dynamic forces the coalitions so formed apart from one another. In other words, in the typical focus group we can expect that respondents will divide into opposing camps. These camps will then dispute with one another about what the key benefits of the product are, the nature of its most desirable features, and so forth.

The relevance of this phenomenon to the study of segments within the consumer population is striking. After all, the ideal segmentation scheme is one that maximizes similarity within segments, while also maximizing dissimilarity between segments. What better way to grasp the segmentation possibilities within a market than to watch two coalitions within a group dispute the merits of their positions relative to one another? Again, one will learn nothing about which segment is the larger one; but one will learn a great deal about the differences that divide any two segments, and about the factors that unite consumers within each segment.

Here is a case where groups do not simply possess an advantage over individual interviews, but actually exhibit a feature which cannot be duplicated in one-on-one interviews. An interviewer speaking to a single respondent cannot argue with that respondent; cannot deny the merits of his views; cannot reject the value of his perspective: in a word, cannot *oppose* the respondent. By contrast, all of these behaviors are possible between any two respondents in a group discussion. When channeled by a skilled moderator, this adversarial energy between coalitions can lead to a much sharper differentiation of respondent needs and wants. As can be seen in Figure 1, the group and individual lines diverge most sharply in the case of ideas which are moderately common. These, of course, are ideas held by a sub-group of consumers, what we have termed segmented ideas. The tendency of coalitions to polarize is what leads to the relatively large fraction of airtime devoted to these kinds of ideas within group discussions.

Conclusion

Our purpose in this paper was to place the use of group discussions on firmer ground. By advancing specific propositions concerning what groups can and cannot do, we hope to have clarified the role of qualitative techniques in consumer research. Building on the foundation provided by Calder (1977), our defense of qualitative research has taken a different form than those commonly offered. Rather than extol its benefits with vague and difficult to measure terms such as "richer" and "deeper," we sought to portray the kinds of *generalizable* knowledge that can be gathered with the aid of these techniques.

Our arguments in favor of group over individual qualitative research similarly depart from conventional positions. We made a virtue out of what is typically seen as the Achilles heel of focus groups: the operation of interpersonal influence processes. We hypothesized that the *biases* created by such processes are *favorable* to the purpose that guides most market research studies. Group discussions are biased in favor of ideas that most consumers hold, and group discussions also tend to polarize among opposing sub-groups. These interpersonal processes serve as a useful filter, and can also act to enhance contrasts of interest.

It hardly needs stating that the positions we have taken are hypothetical and as yet unsupported by experimental investigations. We have sought to develop our views in sufficient detail to make such empirical work possible. The propositions advanced in this paper are, we believe, eminently testable, and they do build on earlier theoretical work. A study such as Fern's (1982) provides a model for the kinds of experiment that need to be done. In the meantime, the ideas presented here may stimulate further work on what remains a poorly understood consumer research technique: the focused group discussion.

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"Degrees of Freedom" in Case Research of Behavioral Theories of Group Buying

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Abstract

Wilson (1986a) has noted a significant lack of systematic progress in building theory about group decision making processes. In the present study, a "degrees of freedom" (Campbell 1975) approach is used to perform a crucial test of four theories of group decision making. Observational case data was used to construct the "degrees of freedom" to examine the goodness of fit of competing and complementary theories. Results of an exploratory study indicate that in the context of a modified rebuy situation, one theoretical model, the bounded rationality model, tends to have more theoretical predictions confirmed by the data than the other three models considered.

Introduction

Research on individual choice processes has been plentiful (e.g., Wright 1975; Park and Lutz 1982) and theory development in this area has progressed (Howard and Sheth 1969; Engel, Kollat, and Blackwell 1974; Hansen 1976; Bettman 1979). However, there are no clear theoretical frameworks for consumer group decision making processes. After many studies, the family decision making literature contains equivocal findings about how family groups resolve individual preferences to arrive at a group decision (e.g., Park 1982; Davis, Hoch, and Ragsdale 1986).

The development of behavioral theories of group buying behavior in organizations has fared somewhat better due the work of Robinson, Faris and Wind (1967) and Wind (1966). These researchers proposed the testing of propositions from behavioral theories of the firm (Cyert and March 1963; Cyert, Simon & Trow 1956) using case research data. The purpose of the present paper is to examine propositions from several organizational theories simultaneously using a "degrees of freedom" approach developed by Campbell (1975).

Examination of competing and/or complementary theories in this manner has been recommended by Platt (1964) with his idea of "strong inference." Sternthal, Tybout and Calder (1987) maintain that relatively more scientific progress can be made by *comparing* theories rather than simply conducting more empirical studies to increasingly confirm a theory.

Although the case data for this study is from an organizational setting, the methodology can be applied to consumer settings involving family buying decision processes. The data were typed transcripts of personal interviews conducted by the first author. Each buying decision transcript was evaluated by judges. This type of data generation and judging procedure is similar to verbal protocol analysis often used in consumer decision making studies. Therefore, this methodology is applicable to consumer as well as organizational settings.

The product stimulus here, office copiers, is a rebuy decision. Although it may seem that the purchase

of a copier is more complex than a rebuy, actual interviews revealed that the decision process tended to be characteristic of a rebuy rather than a new task. Decisions were made relatively quickly (average time of 2 weeks between problem recognition and order placement), the buying center was small with no more than three persons involved at *any one* point in time. A post-hoc explanation for this is the fact that there are many (5+) brands of desktop copiers available with comparable features and prices.

Conceptual Framework

Since the early work of Wind (1966) and Robinson, Faris and Wind (1967), several researchers have proposed inductive models of organizational buying behavior (Crow, Olshavsky & Summers 1980; Hakansson 1982; Vyas & Woodside 1984). Wilson (1986a, 1986b) notes the need for more theory building in industrial buying and offers insights on theory development from small sample studies.

Heretofore much of the empiricism-to-theory-building approach used in research on organizational buying behavior has been process modelling akin to Bonoma's (1985) drift, design and prediction states of case research. Drift involves learning the concepts and social environment of the phenomenon. Design evolves from drift through the inductive process of the researcher. The researcher offers an inductive set of propositions to explain variances in observations. The prediction or generalization-formation stage builds generalizations for testing, using more cases for different sites.

Now the possibility exists to test the structures (i.e.,

the inductive set of propositions) of behavioral theories in organizational buying behavior. Such tests calls for examining "thick" (Geertz 1973) case descriptions to learn the degree to which the set of theoretical propositions are supported. A crucial test (Carlsmith, Ellsworth & Aronson 1976) can be made by relative degrees of fit of competing theories, e.g., an economic versus a political theory of decision-making.

Tests on the degrees to which case data fit one or more theories have been described first by Campbell (1966; 1975) as "pattern-matching" and "building degrees of freedom." Dean (1986) has been first to apply the method to test behavioral theories of organizational decision-making.

In a case study done by an alert social scientist who has thorough local acquaintance, the theory he uses to explain the focal difference also generates predictions or expectations on dozens of other aspects of the culture, and he does not retain the theory unless most of these are also confirmed. In some sense, he has tested the theory with degrees of freedom coming from the multiple implications of any one theory. The process is a kind of pattern-matching in which there are many aspects of the pattern demanded by

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theory that are available for matching with his observations on the local setting (Campbell 1975, pp. 181-182).

Campbell calls for direct tests of the "box scores" of correct and incorrect predictions of different theories applied to case data. "We need a tradition of deliberately fostering an adversary process in which other experts are encouraged to look for other implications of the theory and other facts to contradict or support it" (Campbell 1975, p. 186). Also, Campbell (1975, p. 188) advocates that "one should keep a record of all of the theories considered in the creative puzzle-solving process [in inductive data-to-theory building]. To represent the degrees of freedom from multiple implications, one should also keep a record of the implications against which each was tested, and the box score of hits and misses."

A Recent Study

To apply Campbell's (1975) recommendations, Dean (1986) developed a prediction matrix to test four behavioral theories of group decision-making. The four theories included the rational model (Allison 1971), the bounded rational model (Cyert & March 1963), the political model (Pettigrew 1973; Pfeffer 1981), and the garbage can model (Feldman and March 1981). For the prediction matrix a specific hypothesis was formulated for each theory across seven facets or phases of decision making (problem definition to final choice). Thus a total of 28 cells are included in Dean's (1986) prediction matrix (4 theories by 7 decision facets).

Dean (1986) developed one to two operational statements for each cell in the 28 cell prediction matrix. Three trained judges used the operational statements to evaluate the box score hits and misses of each theory by comparing the observed decision-making behavior among managers to the operational statements. The managers' decisions were to buy advanced technology, e.g., a computer-assisted design system. Each judge coded each cell as either a C (the theory is confirmed), an N (the theory is not confirmed), or a P (the theory is partially confirmed).

The levels of agreement among the three judges in Dean's study (1986) were perfect (i.e., CCC, PPP, or NNN) or nearly perfect (e.g., CCP, PPC, NNP) for 82% of the 150 cells evaluated (28 cells by 5 buying decision cases), levels substantially above chance expectations. A central finding in Dean's study was that no one theory dominated all or most of the decision facets; the Garbage Can model was most often refuted among the five cases and seven decision facets.

Dean's (1986) field research application of Campbell's (1975; 1966) recommendations for theory testing using case studies is an important step in "applied epistemology" (Campbell 1975, p. 191), i.e., the integration of qualitative and quantitative knowing. Note that by building degrees of freedom with operational statements among decision-making facets for several theories and including several judges to evaluate the box scores of hits and misses for each theory, the natural, "inevitable residual ethnocentrism" (Campbell 1975, p. 186) of the social scientist to find data to support "his/her theory," and to ignore contrary evidence is curbed. Thus, residual ethnocentrism is reduced in three ways: (1) applying planned theory-testing thoughts (operational statements) to case data, (2) performing crucial tests of multiple theories, and (3) using several

experts, judges, to independently evaluate the associations of the theories to the case data.

The present study is a report on applying the theory-testing case study approach advocated by Campbell (1975; 1966) and demonstrated by Dean (1986) within the context of group buying behavior for a modified rebuy (Robinson, Faris & Wind 1967). In an exploratory study, two operational statements are developed for each of seven decision-making facets. The application of the resulting 14 operational statements to four theories of decision-making provides unique patterns of predictions. The box scores of each theory are estimated for four case studies of group buying behavior by three judges. The results provide normative and theoretical insights into group buying behavior. The next section of the paper is a brief review of some of the concepts and models developed for studying group decision making.

Background on Group Decision Making

Theory building in organizational decision making has been advanced primarily by work done in the organizational behavior field (e.g., March and Simon 1958; Cyert and March 1963; Kepner and Tregoe 1965; Pettigrew 1973; Cohen, March, and Olsen 1972). These theories characterize decision activities in terms of particular aspects or facets. Although each theory uses different terms, seven generalized decision facets are recognized (Dean 1986). They are:

1. Problem definition—the conceptualization of the decision problem or process by buying center members.
2. Search for solutions—the existence, degree and type of search for alternative solutions to the problem(s).
3. Data collection, analysis, and use—the extensiveness, type and function of attempts to collect and use information.
4. Information exchange—the ways in which buying center members share information during the decision process.
5. Individual preference—the existence, nature and resistance to change of buying center members' preferences.
6. Evaluation criteria—how decision criteria are developed and used.
7. Final choice—how, when, and why choices among alternatives are made.

Four decision process theories are described next in terms of the decision facets above. The discussion is largely adapted from Dean's (1986) work and applied to buying decision processes in a marketing context.

First, the Rational Model of organizational decision making (Kepner and Tregoe 1965; Allison 1971) is grounded in microeconomic theory. Decision outcomes are chosen such that the firm derives maximum benefit (utility). In terms of decision facets, buying groups would be expected to develop comprehensive problem definitions, conduct an exhaustive information search, develop 'a priori' evaluation criteria, and exchange information in an unbiased manner. Individual preferences and final buying center choice should reflect the alternative which offers the maximum benefit to the organization.

Second, the Bounded Rationality Model (March and Simon 1958; Cyert and March 1963) posit that decision makers intend to be rational but are constrained by cognitive limitations, habits, and biases (Dean

1986). Problem definitions are simplified, search is sequential and limited to familiar areas, and information exchange is biased by individual preferences. Preferences originate from either personal or departmental sub-goals of the buying center member. Evaluation of alternatives tends to follow a conjunctive decision rule where criteria are expressed in terms of cutoff levels. Choice depends on which alternative first exceeds the minimum cutoff levels of evaluative criteria.

Third, the Political Model (Pettigrew 1973; Pfeffer 1981) proposes that buying center members compete for the decision outcome to satisfy personal and/or departmental interests. Preferences are based on these interests and formed early. Problem definitions, search, data collection and evaluation criteria are weapons used to tilt the decision outcome in one's favor (Dean 1986). Choice is a function of the relative power of buying center members.

Finally, the Garbage Can Model (Cohen, March, and Olsen 1972) suggests that decisions are analogous to garbage cans into which problems, solutions, choice opportunities, and buying center members are dumped. Problem definitions are variable, changing as new problems or people are attached to choice opportunities. Data is often collected and not used. Preferences are unclear and may have little impact on choice. Evaluation criteria are discovered during and after the process, and choices are mostly made when problems are either not noticed or are attached to other choices.

The propositions of each theory regarding the decision facets are summarized in a prediction matrix in Table 1. Given these predictions, several 'a priori' conjectures can be made regarding the research phenomenon in the context of the present study. First, the buying decision is a rebuy for all buying centers.

Conjecture 1: The models expected to apply in the cases here are the rational model and the bounded rationality model. A "rational" process is expected because of organizational policies regarding buying decisions.

Conjecture 2: The degree of rationality is expected to be relatively low, therefore, the bounded rationality model may hold more often than the rational model. The rationale is that the product stimuli (copiers) are standardized and there is relatively low risk involved in buying compared to adopting new technology (Dean 1986).

Conjecture 3: The political model is not expected to dominate because of the nature of the product. A copier purchase is not likely to induce buying center members to act on the basis of personal or organizational sub-unit goals. The purchase is for standard equipment and has relatively low self-relevance for those other than the primary user.

Conjecture 4: The Garbage Can model may find more support in the context of a rebuy versus a

new task decision because buying center members may not feel threatened with the consequences of making a "bad" decision. Thus, they may not act as methodically as they would if the financial and job-related risk was high.

An Exploratory Test of Four Theories Using Case Data

For each of the seven facets of a decision, two operating mechanisms in the form of decision process questions were developed. A 14 x 4 cell prediction matrix was developed from discussion of three judges (authors plus one) regarding the answers to the operating mechanism questions implied by the literature addressing the four theories. Each operating mechanism either confirmed, partially confirmed, or disconfirmed a tenet of the theory. See the prediction matrix in Table 1.

Method

Four buying decisions for office copiers were studied using semi-structured personal interviews with buying center members and archival materials (purchase order requests). Interview transcripts were reviewed by the three judges. The results are profiles of each decision, illustrating the extent to which the facets of each decision were characterized by each of the four theories.

A contact person for each buying center was obtained from the Central Purchasing Office of a large northern university. Buying center members interviewed were secretaries and administrators of four academic departments. Copier purchases were found to be modified rebuys in all cases and consequently had fewer buying center members than new task purchases. For this reason, the two buying center members that were identified as being the most active in the purchase were interviewed.

The personal interviews with buying center members were structured only in that similar questions were asked of each participant. Questions were open-ended, and were not designed to operationalize any of the theories reviewed above. As in Dean (1986), this allowed the structure of the decision process to emerge from participants' own descriptions rather than being imposed by theoretical expectations. See Figure 1 for a list of the interview questions.

Findings

Interjudge Reliability

For each buying center case, judges responded either "Y" (theory confirmed), "N" (theory not confirmed), or "P" (theory partially confirmed), to the 14 operating mechanism questions based on the events in the case. With four buying center decisions having 14 operating mechanisms each, a 56 cell matrix resulted for the three judges. The levels of agreement between the judges were categorized similar to Dean (1986) as perfect (YYY, NNN, PPP); near perfect (YYP, YPP, NNP, NPP); some (YYN, YNN); or none (YNP).

**TABLE 1
PREDICTION MATRIX**

Operating Mechanism	Theoretical Prediction for Models			
	Bounded Rational Model	Rationality	Political Process	Garbage Can
<i>1. Problem Definition</i>				
A. Do the participants view the problem in the same way?	Y	P	N	P
B. Does the problem definition represent the goals of the organization?	Y	Y	N	Y
<i>2. Search for Alternative Solutions</i>				
A. Is search limited to a few familiar alternatives?	N	Y	P	P
B. Are potential solutions considered simultaneously and compared to one another?	Y	P	N	N
<i>3. Data Collection Analysis and Use</i>				
A. Is information collected so that an optimal decision can be made?	Y	N	N	N
B. Is control over data collection and analysis used as a source of power?	N	N	Y	N
<i>4. Information Exchange</i>				
A. Is information biased so as to conform to the preference (position) of the person transmitting it?	N	Y	Y	N
B. Is information exchange negatively affected by people entering and leaving the decision process, and changing their focus of attention?	N	P	N	Y
<i>5. Individual Preferences</i>				
A. Do preferences change as problems become attached to or detached from the decision?	N	P	N	Y
B. Are individual preferences a function of personal goals and limited information about the alternative?	N	Y	P	P
<i>6. Evaluation Criteria/Tradeoffs</i>				
A. Are criteria for a solution agreed on <i>a priori</i> ?	Y	P	P	N
B. Do tradeoffs across solution criteria occur?	Y	N	P	N
<i>7. Final Choice</i>				
A. Is the first alternative that exceeds the cutoff level(s) selected?	N	Y	P	N
B. Is the alternative chosen one which is expected to maximally benefit the organization, compared to other alternatives?	Y	P	N	P

**FIGURE 1
INTERVIEW QUESTIONS**

1. Background information on purchase--what brand/model copier was bought/leased? (This was confirmed by information from Central Purchasing).
2. Please describe, in your own words, the decision making process that you and your colleagues experienced in buying the copier.
3. Who else participated in the decision to buy a copier?
4. How long did it take for your department to make a decision on a copier to buy/lease? When did the process begin? When did it end?
5. What attributes did you use to evaluate alternative brands of copiers? (Probes used by interviewer regarding quality, service, value, features).
6. What is your job title? What are your work responsibilities?

The judges were in perfect agreement for 31 cells (55 percent). Agreement was nearly perfect for 13 cells (23 percent). There was some agreement in 11 cells (20 percent) and no agreement in only 1 cell (2 percent). Comparing these levels of agreement to those expected by chance (11, 44, 22, and 22 percent, respectively) a goodness of fit test yields $\chi^2 = 103.77$ (3 d.f., $p < .001$). This statistic was based on the total observed versus expected responses. An individual analysis for each buying case was not performed due to the sparsity of data in cells. In sum, the distribution of judges responses is substantially different from the distribution of responses

**TABLE 2
DISTRIBUTION OF LEVELS OF AGREEMENT AMONG JUDGES**

Buying Center	Level of Agreement (row %)			
	Perfect	Near Perfect	Some	None
1	10 (.71)	2 (.14)	2 (.14)	0 (.00)
2	8 (.57)	2 (.14)	3 (.21)	1 (.07)
3	4 (.28)	5 (.36)	5 (.36)	0 (.00)
4	9 (.64)	4 (.28)	1 (.07)	0 (.00)
Observed Total	31 (.55)	13 (.23)	11 (.20)	1 (.02)
Distribution of Judges Responses	7 (.11)	25 (.44)	12 (.22)	12 (.22)

χ^2 total = 103.77, 3 d.f., $p < .001$.

expected by chance. There is a high degree of consistency in the responses of the three judges. See Table 2 for details.

Theory "Scorecard" Results

For the sake of brevity, detailed results of one buying decision process are presented next in terms of the total number of "hits" assigned by the three judges for each of the four theories (Table 3). Profiles for the remaining buying center cases are detailed in Tables 4-6

and can be similarly interpreted. A summary of the results is provided in Table 7.

A Detailed Look at Buying Decision #1: Results of the comparative theory test for buying decision #1 are in Table 3 and are interpreted as follows. For Judge A, 8 judgments out of a possible 14 judgments confirmed the predictions of the rational model of decision making. In other words, for the rational model there were 8 hits and 6 misses (8/14 = .57) among the 14 operating mechanisms. Raw scores for the rows may not sum to the same total because multiple hits were possible given overlapping aspects of the theories (see the Prediction Matrix in Table 1).

For the three judges combined, 17 judgments out of 42 (3 x 14) confirmed the predictions of the rational model; that is, the rational model had 17 hits and 25 misses, or a 40 percent hit rate based on the raw (absolute) scores. The bounded rationality model hit in 62 percent of the judgments for this case while the political and the garbage can models both had 31 percent hit rates. The difference in the absolute proportion of hits for the rational model and bounded rationality model is statistically significant (z = 2.01, p < .05). It follows that the proportion of hits for the bounded rationality model is also substantially different from the political and garbage can models. See Table 3.

TABLE 3
THEORY SCORECARD FOR BUYING DECISION #1

	Theoretical Model			
	Rational Model	Bounded Rationality	Political Process	Garbage Can
Raw Score Hits (%)				
Judge A	8 (.57) ^a	8 (.57)	2 (.14)	4 (.29)
Judge B	2 (.14) ^a	9 (.64)	8 (.57)	3 (.21)
Judge C	7 (.50)	9 (.64)	3 (.21)	6 (.43)
Total				
Observed				
Hits	17 (.40) ^b	26 (.62) ^c	13 (.31)	13 (.31)
Total hits across all theoretical models: n = 69				
Hits				
Expected by				
Chance (69 x .25)=17.25	17.25	17.25	17.25	17.25
χ^2 total = 6.53, 3 d.f., p < .10				
Normalized				
Hit Rates (total raw score/69)	.24	.38	.19	.19

^aInterpretation: For Judge A, 8 judgments out of 14 confirmed (hit) the predictions of the rational model (8/14 = .57). For Judge B, only two judgments out of 14 were hits for the rational model.

^bInterpretation: For the three judges combined, 17 judgments out of 42 (3 x 14) confirmed the predictions of the rational model (17/42 = .40), while 26 of 42 (62 percent) were hits for the bounded rationality model.

^cThe difference in the proportion of hits for the bounded rationality model (.61) versus the rational model (.40) is statistically significant (z = 2.01, p < .05).

The total number of hits across all models (n = 69) is obtained by adding the column totals of hits for the four theories. By chance, one would expect the theories to have equal expected hit rates (25 percent) or 17.25 hits per theory (.25 x 69) in this case. Comparing the total observed distribution of hits to the expected

distribution yields = 6.53 (3 d.f., p < .10). Thus, the distribution of hits for the four theories is significantly different from that expected by chance.

Further, the bounded rationality model has the highest relative hit rate (38%); this is computed as a normalized score—the total hits for a model over the total hits for the case (26/69 = .38). These findings support Dean's (1986) contention that while no particular theory may dominantly account for a decision process, one theory may appear to have a better fit than others. See Table 3.

Data for the remaining three buying decisions are presented in Tables 4-6. In Buying Decision #2, the bounded rationality model again has a significantly higher hit rate versus the other models. A test of the difference in proportions between the two models with highest absolute hit rates (bounded rationality and garbage can) yields z = 1.80, p < .10. The observed distribution of hits is significantly different from that expected by chance (χ^2 = 8.90, 3 d.f., p < .05). The bounded rationality model has the highest relative hit rate (38 percent) in Decision 2. See Table 4.

TABLE 4
THEORY SCORECARD FOR BUYING DECISION #2

	Theoretical Model			
	Rational Model	Bounded Rationality	Political Process	Garbage Can
Raw Score Hits (%)				
Judge A	5 (.36)	10 (.71)	4 (.29)	8 (.57)
Judge B	3 (.21)	10 (.71)	6 (.43)	8 (.57)
Judge C	5 (.36)	10 (.71)	5 (.36)	6 (.43)
Total				
Observed				
Hits	13 (.31)	30 (.71) ^a	15 (.36)	22 (.52) ^a
Total hits across all theoretical models: n = 80				
Hits				
Expected by				
Chance (80 x .25) = 20	20	20	20	20
χ^2 total = 8.90, 3 d.f., p < .05				
Normalized				
Hit Rates (total raw score/80)	.16	.38	.19	.27

^aThe difference in the proportion of hits for the bounded rationality model versus the garbage can model is statistically significant (z = 1.80, p < .10).

In Buying Decision #3, the rational model has the highest absolute and relative hit rate with the garbage can model having the second most hits. The difference in the proportion of hits between these two models is not statistically significant (z = 1.48). The distribution of observed hits is substantially different from that expected by chance (χ^2 = 14.24, 3 d.f., p < .001). See Table 5.

Finally, in Buying Decision #4, the bounded rationality model again has the highest absolute and relative hit rate. Compared to the two second best models, the political and garbage can models (40 percent hits each), the bounded rationality model had an absolute hit rate of 66 percent. The difference in these proportions is substantial (z = 2.4, p < .05). The difference between the observed hit rate and that expected by chance is also significant (χ^2 = 6.0, 3 d.f., p < .05). See Table 6.

TABLE 5
THEORY SCORECARD FOR BUYING DECISION #3

	Theoretical Model			
	Rational Model	Bounded Rationality	Political Process	Garbage Can
Raw Score Hits (%)				
Judge A	10 (.71)	6 (.43)	2 (.14)	6 (.43)
Judge B	6 (.43)	5 (.36)	3 (.21)	8 (.57)
Judge C	11 (.79)	4 (.29)	1 (.07)	6 (.43)
Total Observed				
Hits	27 (.64) ^a	15 (.36)	6 (.14)	20 (.48) ^a
Total hits across all theoretical models: n = 70				
Hits Expected by				
Chance (70 x .25)=17.5	17.5	17.5	17.5	17.5
χ^2 total = 14.24, 3 d.f., p < .001				
Normalized				
Hit Rates (total raw score/70)	.39	.21	.09	.29

^aThe difference in the proportion of hits for the rational model versus the garbage can model is not statistically significant (z = 1.47, p > .10).

TABLE 6
THEORY SCORECARD FOR BUYING DECISION #4

	Theoretical Model			
	Rational Model	Bounded Rationality	Political Process	Garbage Can
Raw Score Hits (%)				
Judge A	5 (.36)	9 (.64)	6 (.43)	6 (.43)
Judge B	3 (.21)	9 (.64)	8 (.57)	6 (.43)
Judge C	6 (.43)	10 (.71)	3 (.21)	5 (.36)
Total Observed				
Hits	14 (.33)	28 (.66) ^a	17 (.40) ^a	17 (.40) ^a
Total hits across all theoretical models: n = 76				
Hits Expected by				
Chance (76 x .25) = 19	19	19	19	19
χ^2 total = 6.0, 3 d.f., p < .05				
Normalized				
Hit Rates (total raw score/76)	.18	.37	.22	.22

^aThe difference in the proportion of hits for the bounded rationality model versus the political or garbage can models is statistically significant (z = 2.40, p < .05).

The findings for the four cases are summarized in Table 7. The bounded rationality model had the highest absolute hits (99) with the garbage can model in second place with 72 hits. The percentage values represent the column totals for each model. For example, across all cases and judges, each model has 168 judgments (14 operating mechanisms x 3 judges x 4 cases). For the rational model, 71 hits out of 168 is 42 percent.

The difference in the proportion of absolute hits for the bounded rationality model (.59) versus the garbage can model (.43) is substantial (z = 2.93, p < .05). It follows that the bounded rationality model had a

substantially higher proportion of hits versus the rational and political models as well.

The total number of hits for across all judges and models is 293 from the column totals. By chance, each theory should have 73.25 hits if the probability of hits among theories is assumed equal. The distribution of observed hits is substantially different from that expected by chance ($\chi^2 = 15.90$, 3 d.f., p < .005). Finally, the bounded rationality model has the highest relative frequency of hits versus the other models.

TABLE 7
SCORECARD SUMMARY FOR ALL BUYING DECISION CASES

	Theoretical Model			
	Rational Model	Bounded Rationality	Political Process	Garbage Can
Raw Score Hits				
Case #1	17	26	13	13
Case #2	13	30	15	22
Case #3	27	15	6	20
Case #4	14	28	17	17
Total Observed				
Hits	71 (.42)	99 (.59) ^a	51 (.30)	72 (.43) ^a
Total hits across all theoretical models: n = 293.				
Hits Expected by				
Chance (293 x .25)=73.25	73.25	73.25	73.25	73.25
χ^2 total = 15.9, 3 d.f., p < .01.				
Normalized				
Hit Rates (total raw score/293)	.24	.34	.17	.17

^aThe difference in the proportion of hits for the bounded rationality model versus the political or garbage can models is statistically significant (z = 2.93, p < .05).

Summary and Conclusions

The bounded rationality model had a significantly greater proportion of confirmed predictions (hits) in three of the four buying cases. In Buying Decision #3, the rational model had the greatest absolute hits but that proportion was not statistically different from the garbage can model in second place. The garbage can and rational model of decision making were almost tied for second place in the combined analysis (see Table 7). The garbage can model had a slightly greater absolute proportion of confirmed predictions versus the rational model (.43 versus .42, respectively) but both were significantly less than the absolute proportion of hits for the bounded rationality model (.59). The political model ranged from being tied for second place in Decision #4 to last place in Decision #3.

In conclusion, several observations can be made about the conjectures stated earlier. Regarding Conjecture 1, the bounded rationality model does seem to have the "best fit" in the context of a rebuy decision to acquire a copier. Tenets of the bounded rationality model were consistently supported by the judges' responses to the operating mechanisms. Dean's (1986) finding that tenets of one theory may dominate results is supported by the findings of the crucial test performed in the present study. Tenets of the other theories were certainly supported, to a degree, by the observational data but the

bounded rationality model had the greatest number of absolute and relative hits in the overall box score (see Table 7).

In Conjecture 2, the rational model was proposed to be more applicable than the political or garbage can models. This conjecture was not supported by the judges' responses. The rational model had the greatest hits in Decision #3 but no consistent support for the remaining decision cases.

Support for aspects of the political model was more evident than proposed in Conjecture 3. Thus, there was some degree of political maneuvering by buying center members even in a relatively risk-free, mundane decision. The conclusion from the present results and from Dean's (1986) study is that the political model may have relevance in both rebuy and new task decisions. These processes should be considered for inclusion in future models of group decision making.

Finally, Conjecture 4 is supported by the results of the present study regarding the garbage can model. Aspects of the garbage can model found more support in the cases here than in Dean's (1986) study. Buying center activities were characterized by some aspects of the garbage can model such as uncertain preferences, no 'a priori' development of evaluative criteria, and uncertain problem definition.

Future Research and Limitations

Although the current study is conducted in an organizational buying context, the methodology may be useful in building and testing theory in consumer group choice situations. A number of case studies of family or consumer (small) group choices could be collected and the underlying theories of choice tested using the "degrees of freedom" approach illustrated in this paper. The output would be a measure of the appropriateness of competing and/or complementary theories. Such research would serve as input to further experimental or survey studies of consumer group decision making.

A limitation to the study is the use of the authors as judges. More work in this area is planned by the authors and independent judges will be employed at several stages of the research process. For example, one set of judges will be asked to design the prediction matrix according to their interpretation of the theories compared. A different set of judges will be enlisted to go through the interview transcripts to record the "box scores." A second limitation is the fact that only one product was studied. Different products (of varying task complexity) bought by organizational and families should be examined.

Future studies of comparative theory testing are recommended for all areas of group decision making. Adversary replication (Campbell 1975) is strongly encouraged. Copies of each buying decision case and judges responses are available from the authors for examination by others that would care to conduct an adversary replication. Such work would offer objective insights for future development of models and theories of group decision making.

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Respondent Anxiety Reduction with the Randomized Response Technique

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Abstract

This paper reports the results of an experiment evaluating the relative effectiveness of three randomized response model techniques in reducing respondent anxiety for questions on sensitive issues. Skin conductance was used as a measure of state anxiety. A conventional direct questioning technique was used as a control. The results clearly indicate that the Hopkins flask method and the spinner method were more effective than the telephone randomization device or direct questions in reducing respondent state anxiety due to question sensitivity.

Introduction

The purpose of this study is to evaluate the ability of three randomized response methods and conventional direct questioning to provide reliable data for sensitive consumer behaviors and attitudes.

Two specific error types have a unique impact on total error in consumer research on sensitive issues. Response error occurs in circumstances where data provided by respondents does not correspond to their true states of nature, behavior or attitudes. This problem has a number of causes. Subjects may answer a question without accurate personal knowledge, or they may deliberately provide misleading details in their response.

Nonresponse error, on the other hand, results when a member of the sample cannot be reached for comment, or when a respondent refuses to answer at least some part of the measurement instrument. There are three major reasons for these behaviors. Either they regard the information requested as extremely personal, or they feel revealing certain items would be embarrassing, or they attempt to guess and satisfy the perceived expectations of the experimenter (Tull and Hawkins 1984).

Both forms of error are aggravated by situations where information on sensitive issues is requested from individuals. Respondents have a tendency to provide normative responses, or refuse to respond at all, when there is a perceived risk in giving a truthful answer.

This tendency is a function of deviation of their true response from the relevant norms, the perceived probability of disclosure and the perceived consequences of disclosure. Any method which can reduce this perceived risk should logically lead to a reduction in total error for survey research on sensitive issues. One class of sensitive consumer behavior involves illegal behaviors such as shoplifting or drug usage. These methods can also be applied to consumption of products or services which are socially stigmatized. Abortion and contraceptives are good examples of this class of consumer behavior.

Randomized Response Method

In 1965 Warner proposed the randomized response technique as a method for reducing respondent concerns about answering sensitive questions. This device allows subjects to report their true behavior and attitudes toward sensitive issues while at the same time eliminating their risk of disclosure.

In the simplest case, an individual first observes the result of a randomization procedure with dichotomous

outcomes. This process then determines whether the respondent answers the actual question or provides a fake response. The interviewer remains unaware of which reply was selected. Only the knowledge of the sample size, the number of yes or no responses, and the probabilities assigned to each condition are necessary to estimate the population parameters. The security offered to subjects is expected to enlist greater cooperation and result in estimates with reduced error variance. Lamb and Stem (1978) have demonstrated the validity of this conclusion empirically. Their study indicates that the model provides reductions in error variance beyond conventional methods in sensitive situations.

Randomized response techniques have been widely used to study certain types of consumer behavior. Consumption of illegal drugs has been the subject of a number of studies using randomized response methodology (Brown, 1975; Brown and Harding, 1973 and Dawes, 1974). Shoplifting behavior in the retail environment has been investigated (Geurts, Andrus and Reinmuth, 1975 and Reinmuth and Geurts 1975), along with the use of products and services which are stigmatized. Numerous studies have investigated the utilization of abortion services and the purchase behavior of contraceptives (Abernathy, Greenberg and Horvitz, 1970; Greenberg, Abernathy and Horvitz, 1970; Shimizu and Bonham, 1978 and Liu and Chow, 1976).

A comprehensive review of the RRM and further examples of its applications can be found in a monograph by Fox and Tracy (1986), or in a review article by Horvitz, Greenberg and Abernathy (1976).

Anxiety

This paper relies on a theoretical framework (Spielberger, 1972), which explains observed behavior resulting from the use of the randomized response technique. Since anxiety reduction is an implicit assumption of the randomized response model, it will be the focus of the analysis which follows.

An anxiety theory composed of two distinct constructs is frequently encountered in the psychology literature. First proposed by Spielberger (1972), this model has been incorporated in numerous studies. State anxiety is defined as an individual manifestation of temporary emotional reactions during threatening circumstances. This form of anxiety depends on personal perceptions of danger and elicits autonomic nervous system responses. Trait anxiety, on the other hand, refers to a subject's general tendency to have enduring behavioral dispositions over time. It should be possible to distinguish between underlying tendencies and arousal due to an external stimulus using this model.

A state anxiety reaction would be expected to occur when a socially, psychologically or physically dangerous stimulus is presented to an individual. The degree of physiological reaction is hypothesized to correspond directly with the perceived level of threat the situation generates. Cognitive appraisal and learned defense mechanisms will serve to mediate this process. Threatening situations may be reevaluated and/or avoided entirely. For example, a respondent can either refuse to answer a question or can provide an untrue response. In

either case, a proportional change in involuntary nervous system activity would be anticipated. Individual differences in anxiety proneness may also influence the perception of a given circumstance.

Method

State anxiety in a sensitive question situation is a function of the respondents perceptions of personal risk from a truthful response to the question. As with any perceived risk, the state anxiety is the product of the consequences of disclosure, times the probability of disclosure (Cunningham 1967).

In a given question situation total anxiety can be described as follows:

$$\text{At} = \text{At} + \text{As} \quad (1)$$

$$\text{and } \text{As} = \text{S} + (\text{C} \times \text{P}) \quad (2)$$

$$\text{or } \text{AT} = \text{At} + \text{S} + (\text{C} \times \text{P}) \quad (3)$$

where: AT = Total anxiety for a given individual/situation,

At = Trait anxiety for a given individual respondent,

As = State anxiety for a given individual/situation,

S = The anxiety introduced by the interviewer, the instruments and other situational factors,

C = The perceived consequences of disclosure of the respondents answer,

P = The perceived probability of disclosure of the respondents answer for a given question method.

In order to evaluate the effectiveness of a randomized response method all effects except the portion of state anxiety due to the method must be controlled. Individual differences in trait anxiety and that portion of state anxiety attributable to interviewer effects and experimental situation, question sensitivity, consequences of disclosure can all be controlled by randomization or by using identical stimuli. With all other factors controlled any variation in total anxiety can be attributed to differences in the method or perceived probability of disclosure.

When confronted with a non-sensitive question, since consequences of disclosure are zero, differences in anxiety are due wholly to the questioning technique. On the other hand, when confronted with a sensitive question, anxiety is composed of the combination of anxiety due to the technique plus that due to the perceived probability of disclosure. The increase in anxiety between non-sensitive questions and sensitive questions is a measure of a questioning techniques ability to minimize perceived probability of disclosure, and therefore the effects of question sensitivity.

Skin Conductance

Electrodermal response was chosen as the physiological measure of state anxiety based on its reliable use by previous researchers (Born, Mainka and Stolting 1980; Hentschel and Ternes 1984; Knight and Borden 1979; McLeod, Hoehn-Saric and Stefan 1986).

Although there are a number of electrodermal measurements available, skin conductance has become the preferred measure of arousal (Edelberg 1972; Fowles et al. 1981; and Venables and Christie 1973) In addition, skin conductance has been found to be normally distributed (Edelberg 1972; and Schlosberg and Stanley 1953).

An E & M Instrument Company physiograph, Model DMP-44, was used to measure electrodermal activity in a manner consistent with generally accepted and recommended procedures (Fowles et al 1981). SCR is reported in Micro-mhos, a measure of electrical conductance. Two silver/silver chloride electrodes were attached to the non-dominant hand of all subjects during the questioning period. The first five questions were used to calibrate the equipment, stabilize the readings and set a base level for each respondent.

Establishing a base level standardized the dependent variable so that any individual differences in skin resistance due to trait anxiety are minimized. This acts, along with random assignment of subjects, to preclude the possibility that variation in respondent reactions to stimuli is an artifact of trait anxiety.

Sample

A convenience sample of 137 undergraduate students was used to examine the relationship between questioning technique and state anxiety. Students were selected in an effort to obtain homogeneous treatment groups and thereby provide as rigorous a theory test as possible. This type of sample was preferred because heterogeneous respondents would have exhibited greater variation in behavior. Furthermore, the chance of making an incorrect statistical inference increases when the error variance is larger. The probability of rejecting the null hypothesis due to uncontrolled factors, when it is true, was reduced by employing students as subjects (Calder, Phillips, and Tybout 1981).

Treatments

Experiments were conducted on a one to one basis in a research laboratory by four trained assistants. Upon entering the lab, a subject was randomly assigned to one of four treatment conditions. Each person was then informed that the research was concerned with evaluating the effectiveness of alternative survey methods, that they could terminate the interview at any time, and that all their answers would remain confidential. Every respondent, except one person, agreed at this point to continue the interview. This particular individual indicated that he did not have the time required to participate in the study. The remaining one hundred and thirty six subjects responded to a series of fifteen questions.

The first five questions were used for the warm up. The remaining ten questions were equally divided into queries that had been classified as either sensitive or non-sensitive in nature. The process consisted of a number of surveys asking for ratings of question sensitivity. The selection of sensitive and nonsensitive questions was judgmental, and was based on high or low mean ratings along with low variance.

At the end of the session, participants completed a short self administered questionnaire. Measures of question sensitivity were obtained using a seven point bipolar adjective scale. A rating of one indicated that the question was not sensitive while a rating of seven indicated the question was regarded as very sensitive. Demographic questions were also included.

The participants in the first condition acted as the control group and did not use a randomized response device to determine whether they gave actual or fake answers. They simply answered yes or no to a series of fifteen direct questions. Those respondents placed in the remaining three experimental groups each used a different

type of technique to dictate the form of their response. However, all three groups had the same probabilities associated with the stipulated procedure. The likelihood of giving an actual answer for any question was 70% while the chance of giving a fake yes or no reply was 10% and 20% respectively.

The second group used a spinner randomization device developed by Stem and Steinhorst (1984) which provided them with specific directions. A window on the face of the spinner opened on a fake answer or a gray area which indicated the respondent should provide a true response.

The third group utilized the Hopkins flask model randomization device (Liu and Chow, 1976). This device consists of a flask containing different colored marbles. When a white marble was shaken into the neck of the bottle people gave the fake answer written on its surface. If a green marble appeared, the true answer was given.

For the final group, a randomization device developed for use over the telephone was used to determine responses. Specification of a phone book page was the first step in this randomization device. Next, a subject selected a phone number as a starting point and did not reveal it to the interviewer. Successive numbers were then used to determine the form of reply (Stem and Steinhorst, 1984). In this study, strings of digits ending in three through nine resulted in an actual answer being given while an automatic response of yes was given when the number equaled two. The fake answer no was the proper response in all other circumstances.

Analysis

A repeated measure ANOVA was used to test for overall differences between the methods; for differences between methods for sensitive questions; for differences between methods for non-sensitive questions; for differences between methods for the increase due to question sensitivity. The mean of each subjects responses to the five sensitive and five non-sensitive questions were entered as repeated dependent measures. Treatment level was the sole independent variable.

Results

Differences in subjects age and sex have been found to significantly effect the amplitude of physiological measures of anxiety (Venables and Christie 1973). For this reason, a Chi-square analysis was conducted on these demographic characteristics before any investigation of state anxiety took place. As Table 1 indicates, no significant differences were identified between participants assigned to alternative treatment conditions with respect to either variable. Any bias that may have occurred from these potential confounding influences appears to have been effectively controlled by the random assignment of subjects.

The exit interview sensitivity ratings provided by each respondent for each of the ten questions of interest were correlated with the mean SC score for that question. This process provides an estimate of the criterion validity of using skin conductance as a measure of state anxiety resulting from question sensitivity.

Table 1
Chi Square Test for Treatment Assignment

Variable/ Value	Treatment				χ^2	p
	Direct	Flask	Spin- ner	Tele- phone		
Age					1.508	0.680
21 and Under	20	16	17	20		
22 and Over	14	18	17	14		
Sex					1.824	0.610
Female	14	10	14	15		
Male	20	24	20	19		
Total	34	34	34	34		

Table 2 illustrates a strong correlation between these measures and implies there is sufficient justification to warrant using this procedure to identify questions that are perceived as threatening. While recognizing levels of state anxiety are not directly linked to survey error, it does suggest the hypothesized relationship between item sensitivity and autonomic nervous system activity is valid.

Table 2
Mean Question Sensitivity and Skin Conductance

Question	Sensitivity Rating	SC (M-mhos)
1. Did you ever cheat on an exam?	5.169	45.00
2. Do you eat fish at least once a week?	1.324	27.50
3. Are you intelligent?	4.287	40.15
4. Do you consider yourself attractive?	4.794	43.02
5. Do you like tuna fish?	1.221	24.27
6. Do you believe in legalized abortion?	4.426	35.74
7. Do you like pizza?	1.221	22.24
8. Do you own a TV?	1.287	21.18
9. Were you born in Washington?	1.456	23.95
10. Do you feel that mercy killing should be allowed?	4.515	35.56
$r = .9576$		$p = <.001$

ANOVA

An inspection of composite SC indices, within treatments, indicated that their respective distributions were normal and exhibited constant error variance. A repeated measures ANOVA was used for the analysis (Keppel 1982). As Table 3 indicates, significant variation was found between treatments and between sensitive and non-sensitive questions. More importantly a highly significant interaction between treatment and sensitivity was established. These results indicate that anxiety varied between different questioning techniques, and as expected there was also a variation in anxiety between sensitive and non-sensitive questions. The interaction effect establishes that different questioning techniques have different effects on the anxiety level due to question sensitivity.

Table 3
Repeated Measure Anova for Skin Conductance

Source	Sum of Squares	Degrees of Freedom	F	p
Total	107005.28	271		
Treatment	11337.12	3	7.45	<.0001
Error Between	66954.58	132		
Sensitivity	17546.87	1	315.35	<.0001
Treat by Sens.	3824.33	3	22.91	<.0001
Error Within	7344.38	132		

As shown in Table 4, the basal level of anxiety (situation) for non-sensitive questions varied significantly. This measure indicated the state anxiety due to the method plus the experimental situation. Differences between treatments are therefore due wholly to the method. The telephone method introduced the highest level of anxiety. Direct questioning and the flask method were significantly lower, with the spinner falling between the two extremes.

The mean SCR scores for the sensitive question measures total state anxiety due to both method, experimental situation and question sensitivity. Again the telephone method exhibited the highest anxiety level. Direct questioning was next, as expected, since it provides no protection against disclosure. Both flask and spinner provided relatively low levels of total anxiety, with the spinner performing slightly better than the flask.

Table 4
Treatment Mean SC

Question Type	Total Sample	Direct	Flask	Spinner	Tele-phone
Non-sensitive (Situation)	23.83	21.13	18.65	25.24	30.29
		x-----x	x-----x		
Sensitive	39.89	47.06	27.21	34.26	51.03
		x-----x	x-----x		
Increase (p of Disc.)	16.06	25.93	8.56	9.02	20.74
		x-----x	x-----x		
Total Sample	31.86	34.10	22.93	29.75	40.66

* x-----x indicates differences between treatments significant at $p < .05$ (t-test). All differences between sensitive and non-sensitive are significant.

The difference between the two measures is a measure of the methods ability to minimize any increase in anxiety due to question sensitivity. Both the flask RRM and the spinner RRM were very successful at this important objective. The telephone method provided some slight level of protection over direct questioning, however the difference was not significant.

Discussion

While there is no direct link between anxiety level and response error or non-response error, the results of this study provide strong evidence that the randomized response method can significantly reduce the

level of anxiety due to question sensitivity. The high correlation between anxiety as measured by SC and rated sensitivity indicates a strong relationship.

A significant difference in state anxiety does seem to exist between question methods. The results point to a clear distinction between two of the randomized response methods and direct questioning in terms of anxiety reduction. While the flask and spinner methods were, in part, validated by the results, the telephone method performed quite poorly. Total anxiety was higher for the telephone than for even direct questioning, and only slightly better for minimizing the increase in anxiety due to question sensitivity. While the external validity of using a telephone technique in the laboratory is suspect, it is recommended that the telephone method be used with caution until further study is accomplished.

This area of investigation offers many opportunities for further research. There are other randomized response methods which were not included in this experiment. Studies including these methods on similar as well as other populations should prove interesting. In addition, the perceived risk model presents an opportunity for empirical validation. A final suggestion for further research would be to replicate the study with a sensitive issue for which population parameters are available for comparison with the statistics produced by the randomized response methods. The relationship between anxiety and response error could then be evaluated.

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