

**Product Categorization and Consumers' Prior Knowledge:
Implications for Comparative Advertising**

by

Nimish Gandhi

Dissertation submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
in
Marketing

APPROVED:

Edward F. Fern, Chairman

Ruth A. Smith

Noreen N. Klein

Kenneth D. Bahn

James E. Littlefield

December 1989

Blacksburg, Virginia

**Product Categorization and Consumers' Prior Knowledge:
Implications for Comparative Advertising**

by

Nimish Gandhi

Edward F. Fern, Chairman

Marketing

(ABSTRACT)

Over the years, marketing researchers have conducted several investigations measuring the effectiveness of comparative advertising. The results of the investigations in this stream of research have been equivocal. While the results of some of the studies show comparative advertising inferior to noncomparative advertising, the results of some other studies show the opposite. A few other investigations show no difference between the effects of comparative and noncomparative advertising.

After explaining the phenomenon of comparative advertising, its conceptualization is examined critically. Using the principles of categorization, the phenomenon of comparative advertising is reconceptualized.

Next, the research proceeds to examine the effects of some of the dimensions of comparative advertising identified in its conceptualization. Specifically, this research analyzes the effects of explicitness of comparisons and specificity of cues in advertisements on consumers with differing levels of product familiarity. In a laboratory environment, the subjects' responses to the advertisements are collected for informativeness of the advertisement, extreme brand evaluations, confidence in evaluations and purchase intention.

The results show that high as well as low familiarity consumers find the explicit comparative advertisements more informative than the noncomparative advertisements. High familiarity consumers' affective brand evaluation is more extreme and their purchase intention is greater with the explicit comparative advertisement than the noncomparative advertisement. Further, the attribute cues about the sponsored brand in an advertisement are more effective than the general cues in raising the perceived informativeness of advertisements and, their purchase intention more than the general information. Finally, the conceptual, substantive and methodological implications of the results are discussed and, the directions for future research are identified.

Acknowledgements

Tasks such as a dissertation research are rarely the result of an individual effort. This one is no exception. This work profited greatly from the contributions and support of several individuals.

I wish to express my sincere appreciation to the members of my committee. Ed Fern has guided me throughout the Ph.D. program. His constant guidance has been of immense value to me in completing this research. His pursuit of excellence in research has left an indelible impression on me, and will serve me as a goal to strive for in my academic career.

and consistently amazed me with their abilities to identify potential problems. Their foresight has made significant contributions in this research effort. Their critical input is highly appreciated. and

were a constant source of encouragement. Both were more than committee members – they were friends. I am very grateful for their support and motivation.

This dissertation and pursuit of the Ph.D. program would not have been possible without the support of my wife, . Without her constant love,

encouragement and confidence in my abilities, I would not have been able to successfully complete the Ph.D. program. For that, I shall be indebted to her forever.

I dedicate this work to my parents and my wife.

Table of Contents

INTRODUCTION	1
The Problem	4
Research Objectives	6
Significance of the Study	8
Overview of the Remaining Chapters	10
Chapter Summary	11
REVIEW OF LITERATURE	12
Overview	12
Review of Comparative Advertising Literature	14
Definitions	15
Implications	16
Underpinnings of Comparative Advertising	17
Cognitive Response Framework	21
Implications	22
Effects of Comparative Advertising	24
Effect of Comparative Advertising on Cognitive Measures	26

Arguments Due to Comparative Advertising	27
Recall Effectiveness	29
Brand Awareness	31
Perceptions of Challenger-Leader Similarity	34
Summary of Findings on Cognitive Measures	35
Effect of Comparative Advertising on Affective Measures	36
Claim Believability	36
Usefulness of the Information	39
Interestingness of the Ad	40
Offensiveness of the Comparative Ads	41
Informativeness of Advertisements	41
Attitude Toward the Advertisements	43
Attitude Toward the Sponsored Brand	45
Summary of Findings on Affective Measures	46
Effect of Comparative Advertising on Conative Measures	48
Purchase Intention	48
Sales Response	51
Information Search Intention	51
Summary of Findings on Conative Measures	52
Summary of Findings Based on Cognitive Response Framework	53
Attribution Theory and its Implications for Comparative Advertising	54
Issues Emerging from Comparative Advertising Literature	56
Categorization Framework to Process Information	59
Conceptualization of Comparative Advertising with the Categorization Perspective	63
Review of the Comparative Advertising Literature With Categorization Framework	71
Distinguishing Between Expertise and Familiarity	75
Hypotheses	77
Hypothesis 1	78

Hypothesis 2	80
Hypothesis 3	81
Hypothesis 4	83
Chapter Summary	85
RESEARCH DESIGN AND METHODOLOGY	86
Overview	86
Research Methodology	87
Research Strategy	88
Research Setting	88
Research Design	89
Design	89
Independent Variables	91
Familiarity	91
Cues in Advertisement	93
Comparisons in Advertisement	94
Stimulus	95
Experimental Procedure	96
Sampling Procedure	98
Dependent Measures	99
Statistical Testing Procedure	102
Limitations of the Research	104
Chapter Summary	104
RESULTS AND ANALYSES	106
Overview	106
Development of Measures of Familiarity and Dependent Variables	107
Measuring Subjects' Familiarity with Different Products	108

First Pretest	108
Second Pretest	114
Third Pretest	118
Pretest of Stimuli and Dependent Measures	121
Data Collection Procedure	124
Sample Characteristics	125
Assessment of Subjects' Familiarity	126
Assessment of Gender Dominance in High and Low Familiarity Subjects	127
Cell Sizes	129
Assessment of Dependent Measures Instrument	129
Factor Analysis of Dependent Measure Items	131
Deriving A Factor Structure of Dependent Variables	133
Assessment of Reliability of Measures	136
Developing Composite Scores for Dependent Variables	141
Inter-correlations Among Dependent Variables	143
Hypotheses Tests	145
Hypothesis 1	146
Hypothesis 2	151
Hypothesis 3	155
Hypothesis 4	162
Compendium of the Findings	165
Summary	167
CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH	169
Overview	169
Study Overview	170
Objectives	170
Hypotheses and Operationalizations of Variables	171

Data Collection and Analyses	171
Results	172
Discussion	174
Implications of the Research	180
Theoretical	181
Methodological	182
Substantive	184
Limitations and Boundaries of the Research	186
Suggestions for Future Research	188
Effects of Other Dimensions of Comparative Advertising	188
Type of Product	188
Medium of Communication	189
Involvement	190
Causal Modeling Approach	190
Summary	191
REFERENCES	192
APPENDIX A	201
APPENDIX B	220
APPENDIX C	234
APPENDIX D	246
APPENDIX E	248

Appendix F **260**

Appendix G **267**

APPENDIX H **269**

List of Tables

Table 1.	Distinguishing High and Low Familiarity Subjects by Quartile and Thirds-split Methods from Second Pretest	109
Table 2.	Stimulus Choice Criterion Data from Third Pretest	112
Table 3.	Subjects' Level of Familiarity and Gender	120
Table 4.	Cell Sizes	122
Table 5.	Question Items for Dependent Variables	124
Table 6.	Results of Confirmatory Factor Analyses of Dependent Measures	129
Table 7.	Reliability of Measures for the Final Five Factor Model of Dependent Measures	131
Table 8.	Coefficient Alphas of Items Measuring Dependent Variables	132
Table 9.	Scale Means and Standard Deviations of Each Dependent Variable for All Levels of Independent Variables	134

Table 10. Inter-correlations Among Dependent Variables136

Table 11. Test of Hypothesis 1: Effects of Comparisons in Advertisements on High Familiarity Consumers138

Table 12. Test of Hypothesis 1: Duncan’s Multiple Range Test for Comparison of Means for Significant Anova F Values140

Table 13. Test of Hypothesis 2: Effects of Comparisons in Advertisements on Low Familiarity Consumers143

Table 14. Test of Hypothesis 2: Duncan’s Multiple Range Test for Comparison of Means for Significant Anova F Values144

Table 15. Test of Hypothesis 3: Effects of Interaction Between Comparison in Advertisement and Consumers’ Familiarity 147

Table 16. Test of Hypothesis 4: Effects of Cues in Advertisements 154

Table 17. Test of Hypothesis 4: Effects of Comparisons in Advertisements on Low Familiarity Consumers 155

List of Illustrations

Figure 1.	Dimensions of Comparative Advertising	65
Figure 2.	Hypotheses	74
Figure 3.	Research Design	84
Figure 4.	Hypothesis 1: High Familiarity Subjects	141
Figure 5.	Hypothesis 2: Low Familiarity Subjects	145
Figure 6.	Informativeness of Advertisement	148
Figure 7.	Extreme Affective Brand Evaluation	149
Figure 8.	Extreme Usefulness of Brand Evaluation	150
Figure 9.	Confidence in Brand Evaluation	151
Figure 10.	Purchase Intention	152

INTRODUCTION

Advertisers are frequently drawn to the idea of comparing their brand with the competition to promote it. The major appeal of brand comparisons may be to demonstrate the superiority of one brand over another. Comparison of brands allows the advertisers to exhibit why their brand is better than the other on the market. Indeed, the practice of comparing two or more brands has been used in the print media as early as the eighteenth century (Stevenson and Swayne 1986). However, such an advertising practice has continued to be controversial over the years. There exist two camps of recommendations for, as well as against, brand comparisons in advertisements. In the 1950's and 1960's, advertisers used covert comparisons by identifying competing brands as "brand X" or "the leading brand."

However, the practice of explicitly naming the competing brands was formally endorsed by the Federal Trade Commission in 1972. Several reasons were advanced at that time. It was conceived by the advocates of this practice that comparisons of brands would provide the consumers with information that was not available previously (Ash and Wee 1983). Consumers may be assisted in evaluation and choice of brands by more and better information furnished by the comparison

of brands. Further, it was believed that manufacturers would be forced to improve their brands. Otherwise, they stand to be embarrassed when shortcomings of their brands are identified and highlighted by competitors. Finally, it was contended that comparative advertising could provide relative novelty in advertising and raise the potential for increased attention by consumers, making it a more effective form of advertising.

This advertising practice was not supported by everyone. Critics raised the possibility of consumers being overloaded with information. As a result, consumers may be adversely influenced through misidentification of brands named in the advertisements. In addition, users of the competitive brand may counterargue for their brand, thereby producing a "boomerang" effect (Ash and Wee 1983). That is, the comparative advertising may inadvertently benefit the competitive brand rather than the sponsored brand. The final charge against comparative advertising is that unscrupulous advertisers may mislead consumers by not presenting truthful information in the comparisons of brands. A serious consequence may be that the credibility of the advertising profession may be tarnished due to possible deceptions in advertising.

In any case, the use of brand comparisons is abundant in media. Analyzing advertisements in several magazines from 1970 to 1985, Chou et al (1987) as well as Swayne and Starling (1986) concluded that nearly 20 percent of all advertisements are comparative in nature. While the practice of comparing the brands in advertisements has flourished, the advertising researchers have also attempted to measure its effectiveness over the noncomparative advertising.

The controversy surrounding comparative advertising has generated many studies over the last 15 years. Researchers have used several forms of comparative messages to examine the effectiveness of comparative advertising in

conjunction with many independent and dependent variables. The researchers have, among other independent variables, varied the type of products, the competitive position of the products, to measure numerous dependent variables such as, the attitude toward the advertisement, the believability of the claims. Yet, the results of these studies seem to provide no conclusive evidence. In spite of the many studies in this research stream, the results are equivocal about the effects of comparative advertising.

Additionally, the popular theory used in these investigations (i.e., cognitive response theory) has not been effective in accurately predicting the effects of comparative advertising, warranting a reassessment of the theoretical foundations of comparative advertising. It may appear that the reexamination of the issues in comparative advertising can be facilitated by application of another theory (i.e., categorization theory).

The development and testing of a viable theoretical framework to investigate the effectiveness of comparative advertising is the focus of this dissertation. This research proceeds under the information processing paradigm. This paradigm offers a theoretical basis for understanding receipt, analysis, and acceptance or rejection of persuasive messages. Specifically, working under the information processing paradigm, categorization theory helps explain consumers' processing of comparative and noncomparative advertisements and responses generated thereupon.

The information processing paradigm has enabled researchers to investigate the effects of several factors influencing the processing of persuasive messages. One of them, consumers' prior knowledge, is known to influence information processing by determining the type of evaluation process mediating final judgments (Alba and Hutchinson 1987; Bettman 1979; Brucks 1985; Sujan 1985, Sujan and

Dekleva 1987). When exposed to a persuasive message, consumers may attempt to match the stimulus information with information stored in their memories. Match or mismatch of information can have a different impact on the consumers' reactions, as discussed later. According to the categorization theory, individuals engage in categorization of stimulus information because it simplifies their processing tasks.

The Problem

Typically, comparative advertising researchers have used the cognitive response theory (Greenwald 1968) to investigate the effectiveness of comparative advertising. According to the cognitive response theory, consumers are active information processors who develop thoughts in response to communication. Resulting persuasion (or lack thereof) is due to the cognitive responses generated in terms of agreement, disagreement, or thoughts unrelated to the proposals made in the message. Given the justifications for the practice of comparative advertising, it may appear that such an advertising practice may indeed be beneficial to the sponsor. Intrigued by the possibility of determining the probable superiority of comparative advertising with cognitive response theory, several researchers have investigated whether or not comparative advertising is indeed superior to noncomparative advertising (Levine 1976; Prasad 1976; Wilson 1976; Shimp and Dyer 1978; Golden 1979; Goodwin and Etgar 1980; Pride, Lamb and Pletcher 1977; Gorn and Weinberg 1984).

Several of these researchers (e.g., Levine 1976; Prasad 1976; Wilson 1976; Shimp and Dyer 1978) report that comparative advertising is inferior to noncomparative advertising. Others (e.g., Golden 1979; Goodwin and Etgar 1980; Pride, Lamb and Pletcher 1980; Belch 1981) found no difference between the effectiveness of comparative and noncomparative advertisements. In stark contrast to earlier findings, Gorn and Weinberg (1984) found comparative advertising to be superior to noncomparative advertising. On the other hand, Swinyard (1981) suggested that the advantages of comparative advertising may be realized if the advertisements present the strengths as well as minor weaknesses of the sponsored brand. The lack of conclusive evidence leaves two unresolved but extremely important problems in comparative advertising research.

The first problem is related to the conceptual foundations of comparative advertising. It seems that comparative advertising researchers have availed themselves primarily of only one theoretical framework, which has not been particularly effective (Sujan and Dekleva 1987). The cognitive response theory (Greenwald 1968), used in majority of the investigations in comparative advertising for conceptualizations of the phenomenon, has not been useful in accurately predicting the differences between the effects of comparative and noncomparative advertising. The results of some of the investigations appear to encourage the practice of comparative advertising whereas those of the others discourage it. That is, there exists no guidance for a potential practitioner to use or not to use comparative advertising for his/her brands. The conflicting results of the investigations in this research stream exhibit the need to reexamine the theoretical foundations of comparative advertising. Perhaps, another theoretical approach may permit such an examination.

Compounding the problem of inadequate theory behind comparative advertising is a problem related to the understanding of the nature of comparative advertising. The form of comparative advertising, due to its inherent nature, attempts to show the superiority of one brand over another. This approach appears to invite consumers to consciously elaborate on the information presented to them. Accordingly, the investigations in comparative advertising have incorporated direct explicit comparisons between the identified brands. However, the question of whether it is necessary to provide the consumers with explicit comparisons remains unaddressed. Alternatively, it may be sufficient to imply the comparisons between some brands to the consumers. For instance, an implicit comparative advertisement may merely suggest comparison to the consumers without specifically identifying the competing brand. If the consumers have extensive prior experience in the product category their knowledge may be well organized. With the well-developed category knowledge, the experienced consumers may engage in comparisons regardless of the comparisons in the advertisement. Conceivably, such consumers may provide different responses to comparative advertising than those who have little experience with the product category. In spite of many investigations in this research stream, this issue remains unexplored.

Research Objectives

Gaining an understanding of the issues related to the conceptualization of comparative advertising and how individuals with differing levels of product related knowledge respond to explicit (or implicit) comparisons is the global objective of

this research. Due to the fact that cognitive response theory has not been successful in accurately explaining the effects of comparative advertising, there exists a void in the theoretical explanation of comparative advertising. The major goal of this research is to offer a sound theoretical framework for investigations in comparative advertising. Specifically, categorization theory will be used to explain the phenomenon of comparative advertising.

A brief overview of categorization theory may help in realizing how it can assist in reconceptualizing comparative advertising. Briefly, the categorization theory (Mervis and Rosch 1981, Rosch 1978) states that people divide and group objects into categories for efficient understanding and processing of the environment. The categories enable the people to derive maximum information from the stimulus with the least cognitive effort.

Essentially, categorization is the process of identifying an object as a member of its class, similar to other members and dissimilar from other members (Fiske and Pavelchak 1985). When a brand is compared with another in a comparative advertisement, an attempt is made to identify the sponsored brand's similarity to and dissimilarity from another brand. To the extent that the message facilitates this process, it will be persuasive. Further, the consumers' prior knowledge about the product and its category will assist their processing. This research delineates the effects of consumers' knowledge of products on persuasion resulting from exposure to comparative advertisements.

In addition, advancing the understanding of the issues involved in comparative advertising is another objective of this research. The nature of comparisons, implicit versus explicit, included in an advertisement influences the consumers' reactions (McDougall 1977; Walker, Swasy and Rethans 1986). Due to the equivocal nature of results in comparative advertising research, it appears that the issues

related to the conceptualization of comparative advertising should be dealt with to gain a full understanding of the phenomenon of comparative advertising. One of the objectives of this research is to delineate these issues.

Significance of the Study

This study contributes to marketing knowledge in at least two ways. At the conceptual level, an attempt is made to develop a theoretical foundation that guides not only this research, but also future research in comparative advertising. The phenomenon of comparative advertising is examined critically to understand its underpinnings. This examination, assisted by categorization theory, leads to a new conceptual framework to explain the effects of comparative advertising. The conceptual framework identifies several important issues in comparative advertising, some of which are investigated in this study. For instance, the effects of explicit nature of comparisons as well as presentation of attributes of the brand in an advertisement are examined in this study. Thus, an important contribution of this research is that it introduces a new conceptual framework to explain the effects of comparative advertising. The use of this conceptual framework to guide future research in comparative advertising should be of benefit to marketing researchers.

This study also makes important contributions at the substantive level. Considerable amounts of resources are spent by marketers in creating and communicating comparative messages to the consumers. Attempting to appeal to particular market segments, the sponsor of an advertisement strives to maximize the benefits of the communication by comparing two or more brands. Comparisons

between brands are believed to facilitate consumers' evaluations, and the advertiser hopes that the resulting evaluation is in favor of the advertiser's brand. From the point of view of the consumer, this translates into first comprehending the message and then evaluating the sponsored brand. The outcome of this comprehension is not only the identification of a particular brand, but also the increased salience of information relevant to it together with the inferences that may result. How inferences are made, as well as what kinds of inferences are made about a brand identified in a comparative advertisement, should therefore be of interest to the marketers as well as to consumer researchers. Thus, the next contribution of this research is that it identifies how consumers process the comparisons of brands which should assist marketing managers in developing more effective advertisement campaigns for their brands.

A few methodological advancements are also achieved in this study. To investigate the effects of consumers' prior knowledge on their reactions to comparative advertising, this study makes a case for using consumers' familiarity with a product, and not their expertise, as represented in their prior knowledge. Measurement of consumers' familiarity with a product is accomplished by an objective scale. The familiarity scale, consisting of several items is a general scale that could be used to measure consumers' familiarity with any product. Thus, the development of familiarity scale represents an additional methodological contribution of this study.

Overall, this research establishes a framework that assists marketing managers as well as advertising researchers. While providing guidelines on positioning a brand on a comparative platform, this dissertation will identify future areas of research.

Overview of the Remaining Chapters

The next chapter provides the literature base upon which this dissertation is built. It begins with a discussion of the relevant comparative advertising literature. After critically reviewing past investigations that have implications for this study, some important issues are delineated. The chapter then reviews categorization theory and proposes a reconceptualization of comparative advertising from the categorization perspective. Finally, several hypotheses are derived from the conceptualization at the end of the chapter.

The following chapter describes a research design that helps test these hypotheses. The details of the research design and the procedures for implementing the design are presented. The operationalizations of the independent and dependent variables, as well as of the sampling plans, are also enumerated.

The subsequent chapter discusses the pretests of the measurement of subjects' familiarity and dependent measures. It then describes the analytic procedures and the results of this study.

The final chapter provides a brief overview of the study and discusses the conclusions that can be drawn from the study. This is followed by a discussion of theoretical, methodological, and substantive implications of this research. Finally, suggestions for future research are also made at the end of the chapter.

Chapter Summary

In summary, the concept of comparative advertising was introduced in this chapter. Several arguments in favor of, and against, comparative advertising forwarded in early 1970s were discussed. It was also noted that the results remain equivocal about the advantages and disadvantages of comparative advertising. This discussion led to the identification of the problems to be investigated in this research. Subsequently, the objectives of this research were established and the significance of the research was also discussed. The potential benefits of this research were noted. The chapter concluded with brief overviews of the remaining chapters.

REVIEW OF LITERATURE

Overview

Ever since the Federal Trade Commission (FTC) encouraged explicitly naming competing brands in advertisements, many investigations have been conducted by advertising researchers to determine the effects of such a practice. The use of numerous independent and dependent variables in these investigations has generated a wide spectrum of results.

While some researchers (e.g., Levine 1976; Shimp and Dyer 1978; Prasad 1976; Swinyard 1981; Wilson 1976) suggest that overall comparative advertising is inferior to noncomparative advertising, others (e.g., Belch 1981; Golden 1979; Goodwin and Etgar 1980; Pride, Lamb and Pletcher 1980) claim that there is no difference in the effectiveness of comparative and noncomparative advertising. Naturally, the measures of effectiveness vary considerably in these studies. But on the whole, the results of these studies indicate that, at best, comparative advertising is as good as noncomparative advertising in generating favorable responses toward the

challenging brand. These researchers contend that users of the competing brand tend to argue for their brands, undermining the claims of the challenging brand.

However, a small number of studies (e.g., Camacho 1985; Gorn and Weinberg 1984; Sujan 1987; Walker, Swasy and Rethans 1986) provide some positive results of comparative advertising. These studies show that comparative advertising can bring the sponsor's brand closer to the competing brand by showing the similarities between the brands. This may be beneficial to the challenging brand. While both camps of researchers may have compelling reasons to encourage or discourage the practice of comparative advertising, it appears that the theory behind comparative advertising is not clearly understood.

Given this background, the two fundamental issues this research seeks to resolve are (1) Can a theoretical framework be developed to better explain the effectiveness of comparative advertising? and (2) How do variations in comparisons (e.g., explicit versus implicit) influence the effects of comparative advertising on consumers with differing levels of experience with the product?

In order to address these two issues, this chapter is organized into four major sections. The first section reviews the comparative advertising literature. After elaborating on the definition of comparative advertising, its implications and limitations are discussed. This is followed by an examination of the constitution of comparative advertising for fuller understanding of the phenomenon. Essentially, this assessment reveals that the consumers may undertake comparisons between brands even if the advertisement does not provide them explicitly.

What follows next is a discussion of the dominant theoretical framework used in past investigations, i.e., the cognitive response theory and its implications for comparative advertising. Subsequently, the past investigations are critically reviewed to examine the conceptual and substantive issues and their implications.

This review is divided into three subsections, i.e., the review related to the cognitive, affective and conative measures used in the past investigations. Additionally, this section includes a review of another theoretical framework, i.e., attribution theory and the study based on it. The summary of this section exemplifies the need to apply another theory to determine the effects of comparative advertising and leads to the next section.

The beginning of the second section reviews the categorization theory to provide a perspective on its potential utility for comparative advertising. Next, a conceptualization of comparative advertising with the categorization perspective is offered. This section ends with a review of two investigations in comparative advertising that were based on the principles of categorization.

Integrating the ideas and issues raised in the preceding sections, the third part of this chapter generates the hypotheses about comparative advertising. The final section summarizes Chapter II. The basic issues evolved throughout the chapter are highlighted. What follows next is a review of the comparative advertising literature.

Review of Comparative Advertising Literature

Over the years several investigations have been conducted in comparative advertising. Cognitive response theory (Greenwald 1968) has been the predominant theoretical framework in these investigations. It must be acknowledged that several studies in the comparative advertising literature (e.g., Demirdjian 1983; Jain and Hackleman 1978; Stutts 1982) do not test the utility of the cognitive response theory

as a means to predict the effects of comparative advertising. The objective of these investigations has been pragmatic in that they have attempted to determine the utility of comparative advertising to a potential practitioner. In any case, the measures used in these investigations indicate that they were indeed based on the cognitive response theory. Correspondingly, these studies shall be reviewed with those that specifically conceptualized the phenomenon of comparative advertising on the basis of the cognitive response theory. However, a few studies have used other theories, such as attribution theory and categorization theory. Before considering these approaches and their implications for comparative advertising, it is prudent to understand the relevant definitions, as discussed next.

Definitions

The topic of comparative advertising was initially addressed by Wilkie and Farris (1975) who defined it as advertising that (1) compares two or more specifically named or recognizably presented brands of the same generic products or service class and (2) makes such a comparison in terms of one or more specific product or service attributes.

While the definition of comparative advertising as forwarded by Wilkie and Farris (1975) has guided the majority of the investigations in comparative advertising, other definitions have emerged. Taking a broader perspective, McDougall (1977) incorporated comparison on any dimension in his definition: "Any advertisement that compares, implicitly or explicitly, two or more brands and states or implies that information has been obtained or a test has been conducted on a comparative basis, or that states or implies a particular market standing in relation

to other similar products, whether the brands are named or not, shall be deemed comparative.” Recently, improvising upon Wilkie and Farris’s (1975) definition, Ash and Wee (1983) proposed a more inclusive definition: “Comparative advertisement is an advertisement that compares the sponsored brand against any other explicitly named competitive brand(s) along any attribute relating to product, service, price, market standing or even company factors such as image and status.” While these definitions have facilitated applications and investigations in comparative advertising, several limitations are incorporated in them. The implications and limitations of these definitions are discussed next.

Implications

Although Wilkie and Farris’ definition of comparative advertising has been accepted by many researchers (e.g., Belch 1981, Golden 1979, Goodwin and Etgar 1980, Prasad 1976, Swinyard 1981), it is restrictive in three respects. To be considered comparative, an advertisement must identify competing product(s) and compare them on certain attributes. If an advertisement merely refers to another brand and does not compare it to the sponsor’s brands on any attributes, it would not qualify as a comparative advertisement according to this definition. Further, the comparison needs to be made on attributes related to product(s) or service(s). The comparison on any other factors would not be sufficient for an advertisement to be classified as a comparative advertisement. On the other hand, Ash and Wee’s definition, although more inclusive, allows for explicit comparison only. An advertisement that suggests implicit comparison of brands or compares them on any other dimensions not included in this definition may not be considered as a

comparative advertisement. Finally, according to McDougall (1977), comparison on any dimension of the brand would qualify an advertisement as a comparative advertisement. Further, the nature of comparison is not an issue. His definition allows explicit as well as implicit comparison between the products. In addition, the advertisement must indicate the basis of comparison to be considered comparative.

It is evident that the definitions of comparative advertising used in past investigations have some limitations. Before adopting a definition of comparative advertising for this research, it is necessary to examine the conceptual issues involved in comparative advertising, as pursued in the next section.

Underpinnings of Comparative Advertising

The case for comparative advertising appears to rest on one critical assumption: comparison between two or more explicitly identified brands is valuable to consumers (Ash and Wee 1983). The sponsoring organization strives for favorable responses from the consumers when his brand is compared with another. An inherent objective of comparative advertising is to assist consumers in processing brand information by comparing two or more products. Comparative advertising is believed to accomplish this objective by providing them with a frame of reference. This frame of reference is assumed to enable them to compare the alternatives which may be similar in all but at least one respect.

To ease the consumers' evaluation tasks, the brands are compared and the superiority of one brand over another is identified. While incorporating a comparison in the advertisement may facilitate the decision making tasks, the

(explicit) comparison itself may not be required in the advertisement to propagate it in their minds. As Levy (1983) asked, "What advertising content does not allow some degree of comparison?" Consumers may think of competing brands even if they are not identified in the advertisement. Conventional advertisements that do not identify the competitor's brand but refer to the sponsored brand in comparative terms, such as "best," "cheapest," "freshest," may imply comparisons to the consumers. Thus, a degree of comparison may always be present in a persuasive message, if the advertisements describe the sponsored brand in relative terms. Therefore, as long as the comparison is made in consumers' minds, the advertiser's objective of assisting consumers in their evaluation is satisfied.

Further, the comparison may be made not only on several dimensions, such as products' attributes, but also on other dimensions, such as customer satisfaction, past experience, among others. For instance, brand A may be compared with brand B on price, size, color, or any other attribute. Brands may also be compared by showing the satisfaction some users have had in the past. Further, if target audience members have used the sponsored product, their past experience may serve as a reference for comparison purposes. Moreover, various constraints (e.g., economical) may not allow for exhaustive comparison between the sponsored brand and other brand(s) on all attributes.

Yet another issue in comparative advertising is related to attributes of the brands. Specifically, when the sponsored brand is compared with another, consumers may be able to conduct comparisons on attributes regardless of the presence or absence of those attributes in advertisements. Also, consumers may be able to compare the brands on attributes that may not be included in the advertisement. Thus, certain specific attributes may not always be needed in an advertisement for it to be considered a comparative advertisement.

In sum, defining comparative advertising as advertising that compares two or more explicitly named brands along a limited number of attributes may inhibit capturing the essence of comparative advertising. As Levy (1983) suggested, most advertisements are likely to involve some comparison, whether explicit or implicit. This continuum of comparison encompasses the current practice of comparative advertising and may be a pivotal point in the investigations of its effectiveness.

The objective of assisting consumers in the process of comparison among brands may be accomplished in two ways. First, the comparison may be made for the consumers. By explicitly identifying the competitive brand and making comparisons on specific attributes, the advertiser makes the comparisons for consumers. Current practice and research in comparative advertising is pursued along this path. The other option is to lead the consumers to compare the alternatives for themselves. If a comparison is initiated in their minds, the purpose of comparing the brands is served. That is, by implying comparisons between the sponsored brand and a competing brand, the advertiser can accomplish the purpose of having consumers compare different brands.

It is now possible to offer the definitions of comparative advertising to guide this research. As discussed above, comparisons can be made explicitly or implicitly in an advertisement on a variety of attributes. The third alternative, of course, is not to compare the sponsored brand with another, implicitly or explicitly. It is proposed that the following definitions of comparative advertising be adopted for this research:

An explicit comparative advertisement is one that identifies and compares the sponsored brand with another. The attributes of competing brands may or may not be specified in the advertisement.

An implicit comparative advertisement is one that suggests or implies a comparison of the sponsored brand with unspecified others. The attributes of competing brands may or may not be specified in the advertisement.

A noncomparative advertisement is one that does not, explicitly or implicitly compare the sponsored brand with another. The attributes of the sponsored brand may or may not be specified.

It must be noted that the above definitions alleviate the limitations of the earlier definitions. The definition of explicit comparison calls for a comparison between two or more brands as long as they are identified. The implicit comparative advertisement implies comparison of the sponsored brand with another without identifying the competing brand(s). Finally, the noncomparative advertisement may present a supportive case for the sponsored brand without referring to another brand.

Although the definitions used in the past investigations have some limitations, the problem of diversity of results in comparative advertising may be attributed to the theoretical framework used by the researchers. Almost, all the investigations have been based on the cognitive response framework. Therefore, the research involved in determining the effectiveness of comparative advertising necessarily requires understanding Greenwald's (1968) cognitive response theory.

Cognitive Response Framework

According to the cognitive response view, much of the persuasion is actually self-persuasion (Assael 1987, p.70). This theory contends that the persuasion resulting from exposure to an externally originated message is due to the thoughts that the message recipient generates in response to the communication. These thoughts generated in response to the communication are called cognitive responses and are the end result of information processing activity (Petty and Cacioppo 1981).

In addition, the recipients of the message are considered to be active, rather than passive, information processors who generate responses to the messages. Advocates of the cognitive response theory make the assumption that when a person receives a persuasive communication, an attempt is made to relate the information in the message to the preexisting knowledge that the person has about the topic (Greenwald 1968; Petty, Ostrom and Brock 1981). This process necessitates considering information that may not be found in the communication itself. These additional self-generated cognitive responses (thoughts) may agree with the proposals being made in the message, may disagree, or may be entirely irrelevant to the communication.

To the extent that the communication evokes cognitive responses that are supportive, the individual will tend to agree with the message. To the extent that the communication evokes antagonistic cognitive responses, the individual will tend to disagree with the message (Petty and Cacioppo 1981). In either case, the cognitions elicited at the time of message exposure will determine the amount and direction of attitude change produced. If the thoughts are primarily favorable to the

advocacy position, persuasion will result, but if the thoughts are primarily unfavorable, resistance to the advocacy position will result. The goal of much cognitive response research, then, is to determine how various features of the persuasion situation influence the amount of pro- or counterargumentation that will occur (Petty and Cacioppo 1981).

To summarize, the fundamental premise of cognitive response theory is that the initial attitude change produced by a message will depend on the extent to which favorable or unfavorable thoughts are generated by the message recipient at the time of the message exposure. This premise has clear implications for comparative advertising as discussed next.

Implications

The key to the cognitive response theory is the predisposition of the individual prior to exposure to the message. If the individual is favorably predisposed to agree with the position advocated in the advertisement, s/he will generate support arguments. However, if not favorably predisposed, counterargumentation will occur (Berkman and Gilson 1986). Thus in comparative advertising, the users of the competing brand may react by counterarguing against the comparative claim (Wilkie and Farris 1975). The negative reaction may occur because the comparative message, by directly invoking the consumers' belief structure for the comparison brand, tend to make salient any disparities between the message claim and the consumer's prior beliefs (Belch 1981). The stronger the individual's predisposition toward the comparison brand, the greater the discrepancy between his/her position and that of the advertiser making the comparison. A defensive reaction may occur

whereby negative thoughts (e.g., counterarguments, source derogations, rejections) may be emphasized in processing the message. Not only may negative thoughts be more available and accessible to the individual favorably predisposed to the comparison brand, but also the motivation to argue against the comparative message may be stronger than when no comparison is made or when there are no prior preferences for the comparison brand. In contrast, if the individual is favorably predisposed to the challenging brand, s/he may generate positive responses. In this case, the individual may activate responses indicating that congruent associations have been discovered or that the message argument is supported by already entrenched beliefs (Wright 1973). Thus, there may exist a greater possibility of acceptance of the message in the comparative advertisement than a noncomparative advertisement if the individual favors the challenging brand.

In summary, as stated earlier, the chief objective of the cognitive response theory is to determine how various features of the persuasion situation influence the number of favorable and unfavorable responses that will be generated. These responses mediate the acceptance or rejection of the advertisement (Wright 1973). Based on Wilkie and Farris's (1975) speculation that users of competing brand may react by counterarguing against the comparative claim, several researchers have measured the cognitive responses to determine the impact of comparative advertising (Belch 1981, Swinyard 1981). Using this approach, researchers have investigated the effects of various situations as well as independent and dependent variables in analyzing the consequences of comparative advertising. Appropriateness of taking a cognitive response perspective in comparative advertising can be determined by an analysis of past investigations in this research stream. The next section closely reviews these studies and brings out relevant conceptual as well as substantive issues in comparative advertising.

Effects of Comparative Advertising

The use of a cognitive response theory for examining communication effects is based on the assumption that acceptance of a persuasive message can be modeled in terms of the cognitive cues generated by a message recipient (Belch 1981). The cognitive response theory suggests that message recipients rely heavily on the results of their internal evaluative processes rather than on message content in arriving at an affective position for a persuasive message (Wright 1973). Indeed, the mediating role of cognitive responses in acceptance of advertising was established by Wright (1973). Comparative advertising research has not only included measurement of cognitive responses but also outcome measures such as attitude and purchase intentions to determine the effectiveness of this message strategy. The purpose of this section is to provide a perspective on past research by comprehensively reviewing the literature in comparative advertising.

The effectiveness of comparative advertising has been assessed in twenty-five investigations since the endorsement by the Federal Trade Commission in 1972. Nearly eighteen independent and sixty dependent variables have been used in these investigations.¹ To provide some structure for the measures, these variables may be grouped into three categories: cognitive, affective and conative. Accordingly, the review of the literature is organized into the discussions of the effects of comparative advertising on cognitive, affective and conative measures.

The comparative advertising investigations have included several variations in the advertisements. While all the studies included comparative and noncomparative

¹ It may be noted that all but one of the investigations in comparative advertising have used explicit comparative advertisements. Therefore, unless otherwise noted in the review, the comparative advertisements refer to explicit comparative advertisements.

advertisements, some (e.g., Prasad 1976) used "brand X" type of comparative advertisements, too. Using Wilkie and Farris's (1975) definition, comparative advertisements compared the sponsor's brand with another brand on at least one attribute and exhibited superiority of the challenging brand. The noncomparative advertisements, being supportive of the sponsored brand, identified associated benefits with use of the product. The "brand X" type of comparative advertisements compared the sponsor's brand with another by not explicitly naming the other brand but by referring to it as "brand X."

In addition, the nature of comparative advertisements has been varied in intensity as well as directionality of comparison (e.g., Pride, Lamb and Pletcher 1977). Intensity refers to the degree of specificity of comparison that is made in a comparative advertisement (Pride, Lamb and Pletcher 1977). On the other hand, directionality refers to whether the sponsored brand is associated with or differentiated from the competing brand (Wilkie and Farris 1975). A comparative advertisement is associative if the majority of the references to competing brand(s) point out the similarities between the sponsored brand and the competing brand(s). In contrast, a differentiative comparative advertisement is one in which most of the references to competing brand(s) point out the differences between the sponsor's brand and the competing brand(s) (Lamb, Pride and Pletcher 1977). In either case, the benefit sought by the advertiser is to put the sponsored brand in a favorable light when compared with another brand.

Finally, presentation of one- or two-sided messages has been another variation in the nature of comparative advertisements. One-sided advertisements are solely supportive of the sponsored brand and emphasize its benefits. In contrast two-sided comparative advertisements present positive as well as some relatively

less important negative attributes of the sponsored brand while comparing itself with another brand (Belch 1981, Swinyard 1981).

To gain a perspective on the current status of knowledge in comparative advertising, all the relevant investigations are reviewed in this chapter. As indicated earlier, while most studies in comparative advertising are based on cognitive response theory, some exceptions exist. Swinyard (1981) proceeded with attribution theory while Walker et al (1984) and Sujan and Dekleva (1987) used categorization theory. Consequently, this review first encompasses the investigations that use cognitive response theory. Discussions of these investigations are organized by the cognitive, affective and conative measures used. Discussions related to each type of measure are further organized by specific measures used in the investigations. Next, attribution theory and its implications are discussed, followed by a review of the Swinyard (1981) study. Finally, categorization theory and its implications for comparative advertising are discussed with a review of the Walker et al (1984) and Sujan and Dekleva (1987) studies.

Effect of Comparative Advertising on Cognitive Measures

Several cognitive measures have been used in investigations of comparative advertising. These measures include arguments due to comparative advertising, recall effectiveness, brand awareness, and perceptions of challenger-leader similarity. Included in this section are discussions of those investigations that used these measures and their findings.

Arguments Due to Comparative Advertising

A few investigations have examined the effects of comparative advertising on arguments or thoughts evoked due to exposure to comparative advertisements. Indeed, these arguments or thoughts could be in favor or in opposition to the message conveyed in the advertisements. This sub-section includes those investigations that measured subjects' thoughts as responses to comparative advertising.

Based on the cognitive response framework, Wilson and Muderrisoglu (1980) reported an analysis of cognitive responses to comparative advertising. Varying the comparative advertisements in intensity, they exposed students to actual print advertisements of various products. The experimental design included variations in the type of advertisement (comparative and noncomparative) and intensity of comparisons (low, medium and high) for various products. As expected by the authors, more counterarguments, source derogations and negative-advertisement-related statements as well as fewer support arguments and positive-advertisement-related statements were generated by the comparative advertisements than noncomparative ads for all levels of intensity of comparisons.

As support and counterarguments mediate the effectiveness of an advertisement (Wright 1973) and given that they found greater counterarguments for comparative advertisements, the authors concluded that comparative advertising is less effective than noncomparative advertisements. However, firm acceptance of this conclusion deserves a comment regarding the stimuli used in the investigation. First, the study identifies the sponsors of the advertisements without providing any information about the products themselves. Thus, it is impossible to determine if

the variation in intensity of comparisons was consistent among the sponsors. From the few details given in the report, it appears that the sponsors of high intensity advertisements were different from those in the low or medium intensity advertisements. For instance, the advertisement of Wang Laboratories was low intensive whereas that of Toshiba Business Equipment was high. Further, within each intensity level, the sponsors differed in the type of brands they are known for. For example, two of the medium intensity advertisements were for Allegheny Airlines and DeBeers Diamonds Corporation. Therefore, without any information about nature of the products, it is difficult to accept the notion of lower effectiveness of comparative advertising. More serious doubts about the conclusion of lower effectiveness of comparative advertising would remain if the products used in the study differed on dimensions such as price, complexity, usage frequency, among others. The lack of relevant information about the products may limit the conclusions drawn about comparative advertising.

A study investigating the arguments generated by comparative advertising was reported by Belch (1981), with type of message (comparative or noncomparative), message sidedness (one- or two-sided) and message repetition (one, three, or five exposures) as the independent variables. The participants, members of church groups, when exposed to commercials for a new fictitious brand of toothpaste conveyed their reactions in terms of positive thoughts, negative thoughts, and attitude toward the sponsored brand. The author found a significant main effect of message type on negative thoughts, i.e., comparative message generated more negative thoughts than noncomparative messages.

To measure counterargumentation due to comparative advertising, Stutts (1982) varied comparative advertisements in intensity (low, medium and high) and directionality (associative and differentiative). Student subjects were exposed to

comparative and noncomparative mock print advertisements of tennis shoes. No difference between counterargumentation due to comparative and noncomparative advertisements was found. Further, neither intensity nor directionality were found to have a significant influence on counterargumentation.

Overall, it appears that the findings related to the arguments caused by comparative advertising are equivocal. While Wilson and Muderrisoglu (1980) and Belch (1981) report greater counterargumentation due to comparative advertising, Stutts (1982) reports no difference in counterargumentation due to comparative and noncomparative advertising.

Recall Effectiveness

An early study to assess communication effectiveness of comparative advertising was reported by Prasad (1976). Because "novelty" and "contrast" elements in a stimulus serve to increase attention levels of the audience (Engel, Kollat and Blackwell 1973, p. 212), he conceptualized high recall effectiveness of comparative advertising due to its novelty at the time. In this study, student subjects were exposed to explicit comparative as well as "brand X" comparative advertisements for movie camera with or without prior preference for a well-known brand.

The results indicated that claim recall was higher among subjects who were exposed to the comparative advertisement than among those who were exposed to the "brand X" advertisement, regardless of their prior preferences toward the well-known brand. Further, perception of the competitive position of the sponsor's brand was found to be no different between the comparative and "brand X" ads.

Thus, according to Prasad (1976), a comparative advertisement can enhance message recall to some extent. However, an issue regarding the appropriateness of presenting a persuasive message to an audience that may not typically purchase such a brand remains unresolved. Specifically, students may not be the target market for movie cameras, and therefore, the results of this study should be accepted with caution.

Jain and Hackleman (1978) conceptualized that comparative advertisements should be more effective than noncomparative advertisements for shopping goods. Because these products constitute a considerably salient purchase, the buyers would generally pursue brand comparisons on various features. It would seem, therefore, that comparative advertising would be more beneficial for shopping goods as opposed to convenience products which are purchased routinely.

Focusing on the brand recall effectiveness of comparative advertising, Jain and Hackleman (1978) exposed males and females to comparative and noncomparative advertisements of four products in each category of convenience, shopping and specialty goods. The analysis showed that comparative advertisements generated higher immediate and delayed recall than noncomparative advertisements, but only for convenience and specialty goods, not for the shopping goods. The authors rationalized the unexpected finding by stating that "in the case of convenience and specialty goods, other forms of informational search efforts do not play as important a role as in the case of shopping goods. Therefore, heavy reliance on the advertisement may raise the recall of these products." The authors concluded with a recommendation that comparative advertisements may have a limited advantage over noncomparative advertisements of greater recall for convenience and specialty goods as opposed to shopping goods.

To assess the recall ability of comparative advertisements, Murphy and Amundsen (1981) exposed student subjects to print advertisements of a fictitious brand of facial tissues. The three types of advertisements used, i.e., noncomparative, comparative, and "brand X", failed to show any significant differences in terms of immediate or delayed recall of the name of the promoted brand. However, the statistical association between the advertisement treatments and the claim recall was significant in both immediate and delayed recall situations. The authors found the "brand X" appeal least effective and the noncomparative appeal most effective in terms of immediate and delayed claim recall. Claim recall decay, another dependent variable, was more favorable for the noncomparative advertisement than the "brand X" or the comparative advertisement.

Thus, it appears that the findings related to the recall effectiveness of comparative advertising are unclear. Prasad (1976) found some benefit of comparative advertising for its ability to raise recall. Jain and Hackleman (1978) found greater recall due to comparative advertising for convenience and specialty goods. Finally, Murphy and Amundsen (1978) found the recall due to noncomparative advertising higher than that for comparative advertising.

Brand Awareness

Shimp and Dyer (1978) investigated the effects of comparative advertising mediated by the market position of the sponsoring brand. The researchers exposed students and members of community organizations to four experimental advertisements for fast food restaurants. Working with the hierarchy of effects model (Lavidge and Steiner 1961), the authors hypothesized that the comparative

and noncomparative advertisements would create different responses in terms of cognition, affect and conation (although no direction of effects were hypothesized). The type of advertisement and market position of the restaurants were two independent variables used in the study for measurement of the subjects' responses on variables related to attention, perception and predisposition toward the challenging brand. Contending that the effect of comparative advertisements may be confounded by consumers' prior brand knowledge, the authors included a new brand in their study to eliminate such confounding effects. Further, the authors believed that because the consumers had not formed any beliefs about the new brand, counterargumentation toward the challenging brand might be reduced. In turn, acceptance of the message might be raised.

The brand name identification of the sponsor's brand was not significantly different from that of the compared brand. However, noncomparative advertising was superior to comparative advertising in promoting recall of copy points. Notwithstanding their earlier logic, the authors reasoned that because the subjects had no prior knowledge about the new restaurant, their responses in favor of the leading, well-known restaurant might be expected.

Levine (1976) conducted an investigation to determine the differences in the effects of comparative and noncomparative advertising commercials of health and beauty aids and drug products. The pre/post test included exposing female heads of households to stimuli to determine their responses on identification of the sponsor as well as awareness about the sponsor's brand. The frequency analysis enabled him to conclude that the comparative advertisements suffered from greater misidentification of the sponsor. The awareness about the sponsor's brand was not found to be different for comparative or noncomparative advertisements.

The brand feature awareness as a result of exposure to comparative and noncomparative advertisements has also been investigated by Earl and Pride (1980). Incorporating one- and two-sided advertisements as well as information on performance test results, the authors exposed students to actual print advertisements of analgesics. The authors contended that consumers' responses to comparative advertisements could be influenced by information on performance test results. Accordingly, the researchers varied the degree of performance test results information in their experiment. Their experiment included variation between advertisements (comparative and noncomparative), sidedness (one- and two-sided), and performance test results (none, low and high differential between two brands).

Responses from the subjects were collected for the brand feature awareness. The results showed that the brand feature awareness was significantly high in the presence of performance test results. Additional analysis showed that the feature awareness was higher with high differential test results than with no test results. The type of advertisements and sidedness interacted significantly, generating greater brand feature awareness with two-sided comparative advertisements. Thus, the authors concluded that a two-sided comparative advertisement may provide the benefit of greater feature awareness than a (one-sided) comparative or noncomparative advertisements.

Similar to earlier measures, findings on brand awareness are also nonconsensual. Shimp and Dyer (1978) found no difference in brand awareness in comparative and noncomparative advertisements. In contrast, Levine (1976) found greater misidentification due to comparative advertisements. Finally, Earl and Pride (1980) reported greater feature awareness with comparative advertising only when the advertisement contained high differential performance test results.

Perceptions of Challenger-Leader Similarity

A study investigating the effects of comparative advertising on perceived similarity between the advertised brands, in the context of simultaneous advertising by the competitive brand, was reported by Gorn and Weinberg (1984). Because real-life situations involve advertising by a challenger as well as by the market leader, the authors contended that investigations of comparative advertising should include context of presence or absence of (noncomparative) advertising by the leader as an independent variable. In their experiment, type of advertisement was varied between comparative and noncomparative and context was manipulated by presence or absence of a (noncomparative) leader advertisement in the stimulus material. Type of products (i.e., cigarettes, toothpaste and golf balls) was a repeated factor. With the objective of studying the impact of comparative advertising on perception of a brand in a product category, the authors hypothesized greater perceived challenger-leader brand similarity with exposure to comparative versus noncomparative advertisements. Also hypothesized was greater perceived brand similarity for a hypothetical new brand (in the same product categories) with exposure to comparative versus noncomparative advertisements.

The results supported both hypotheses for the main effects of advertisements and products. Additional analysis showed that cigarette brands were seen as significantly more similar than toothpaste brands, with golf balls in between for both challenger-leader similarity and perceived similarity of new brands. Further, the authors investigated carry-over effects of comparative advertising in other product categories. That is, they hypothesized greater perceived brand similarity among

two brands of cola soft drinks with exposure to comparative advertisements versus noncomparative advertisements. This hypothesis was also supported. In juxtaposition, similarity among two brands of physically different deodorants (one being a spray and the other a roll-on) was not found (as expected) with exposure to comparative versus noncomparative advertisements. The presence or absence of a leader brand advertisement failed to generate any effect on perceived similarity between brands.

The major finding of the Gorn and Weinberg (1984) study is that perceived brand similarity is greater with exposure to comparative advertisements than noncomparative advertisements. Thus, according to the authors, the psychological distance between the challenger and the leader can be reduced by comparative advertising.

Summary of Findings on Cognitive Measures

In summary, it appears that there is no consensus on the effectiveness of comparative advertising on cognitive measures. While Wilson and Muderrisoglu (1980) and Belch (1981) indicate that comparative advertising generates more negative thoughts than noncomparative advertising, Stutts (1982) indicates no difference between the two types of advertising in reference to counterargumentation. Related to recall effectiveness, Prasad (1976) found comparative advertising superior to noncomparative advertising. However, Jain and Hackleman (1978) contend that comparative advertising is superior only for certain types of products. Shimp and Dyer (1978), as well as Murphy and Amundsen (1981), found no difference between them on the dimension of recall effectiveness.

On the other hand, Pride, Lamb and Pletcher (1977) and Levine (1976) fail to provide any recommendation for comparative advertising. Further, Earl and Pride (1980) suggest that awareness of the sponsor's brand may be raised by presenting two-sided advertisements to the consumers. Finally, Gorn and Weinberg (1984) claim the superiority of comparative advertising for the perceived similarity between the compared brands. The results of these and other investigations on affective measures also exhibit no clear evidence for or against comparative advertising, as shown in the next section.

Effect of Comparative Advertising on Affective Measures

The investigations in comparative advertising have used a variety of affective measures to capture and analyze the effects of comparative and noncomparative advertisements. Included among them are variables such as believability of claims made in the advertisement, informativeness and interestingness of the advertisement, attitude toward the advertisement and the brand. This section summarizes the findings in the comparative advertising literature related to these and other affective measures.

Claim Believability

One of the studies investigating the effect on the believability of claims made in the advertisements was conducted by Prasad (1976). The investigation found that

the subjects who had prior preference for the competitor brand found the claim in comparative advertisement less believable than those with no prior preference.

Working under the premise that comparative advertisements attempt to establish the superiority of a brand by pointing out the shortcomings of another brand, Wilson (1976) investigated the believability of claims made in comparative advertisements. In an experiment with type of products as one variable, he exposed students to printed comparative and noncomparative advertisements. The types of products used in this study were similar in nature, such as beer, and toothpaste, among others. The results showed significantly lower believability of comparative advertisements for some of the products. Because the study did not offer any explanation of why the claims made in comparative advertisements of some products have low believability and not others, the findings of the study must be accepted with caution.

Similar findings on believability have been reported by other researchers as well (Murphy and Amundsen 1981; Shimp and Dyer 1978). Both the studies found believability of comparative advertisements to be lower than noncomparative advertisements.

The above-mentioned findings on believability of comparative advertisements are not supported by everyone. Contending that brand loyalty could influence consumers' responses, Golden (1979) controlled it in an experimental investigation. Her results showed no difference in the believability of comparative and noncomparative advertisements.

Lamb, Pletcher and Pride (1979) provide a conditional response to the issue of believability of comparative advertisements. Varying intensity and directionality of comparisons in advertisements, the authors found conditional support for greater believability of comparative advertisements. Comparison between low and

moderate intensity comparative advertisements showed that low intensity comparative advertisements were more believable. Also, comparisons between moderate and high intensity comparative advertisements showed moderate intensity comparisons to be more believable. However, results failed to show that comparative advertisements were (more or) less believable than noncomparative advertisements.

O'Connor (1986) also provides a conditional response to higher believability of claims in a comparative advertisement. His study utilized comparative and noncomparative advertisements for diverse products such as cigarettes, personal computers and long-distance telephone carriers. The results showed that believability of comparative advertisements was higher than noncomparative advertisements only for long-distance telephone carriers, but not the other products. Thus, according to O'Connor (1986), believability is product specific. However, it must be noted that the study does not provide any logic behind such a conclusion. Limited descriptions of stimuli used in the investigation suggest that various advertisements contained different amounts of information. Thus, a speculation about the amount of information influencing the subjects' responses could be raised without an adequate explanation.

Overall, it appears that the findings on believability of comparative advertisements are equivocal. Murphy and Amundsen (1981) and Shimp and Dyer (1978) report that noncomparative advertisements are more believable than comparative advertisements. Golden (1979) and Lamb, Pletcher and Pride (1979) found no difference between the believability of comparative and noncomparative advertisements. Finally, O'Connor (1986) shows that believability of comparative advertisements is product specific.

Usefulness of the Information

O'Connor (1986) also examined consumers' responses on the usefulness of information in the advertisement. The results showed significant main effects for information usefulness by the advertisement type as well as product type. Again, the information provided in the comparative advertisement for the long-distance telephone carrier was more useful than in the noncomparative advertisement. Existence of significant interaction between the advertisement and product corroborates the earlier claim that the effect of comparative advertising is dependent upon the type of product. Again, as stated in the previous sub-section, the issue related to the suitability of comparative advertising for some specific products and not others, remains unresolved.

Usefulness of the information provided in the advertisement has also been investigated by McDougall (1977). In accordance with the cognitive response view, McDougall (1977) contended that if comparative advertisements substantiate superiority claims and avoid direct comparison with a particular brand, attitude toward such advertising practice would be favorable. Substantiation of superiority claims and lack of direct comparison with a particular brand would appear to provide an objective basis of comparisons and therefore, counterargumentation would be reduced, resulting in favorable reactions toward advertising.

After exposing females to comparative advertisements with or without substantiated claims and direct comparisons, their responses were obtained in personal interviews. Using females as subjects was justified by the nature of products, i.e., laundry detergents, bleach and deodorants. The subjects' responses on the usefulness and reliability of the claims made in the advertisement were

analyzed for the three products. Substantiated claims were perceived as significantly more useful and reliable for the laundry detergents. The results were upheld for the bleach, too. However, it must be noted that the study did not incorporate usage of noncomparative advertisements. Thus, the findings indicate the differences between the effects of different comparative advertisements only. Specifically, the differences between only the direct and indirect comparative advertisements with or without substantiation of claims are reported. Also, why comparative advertising may generate favorable reactions for laundry detergents and bleach but not the deodorants is unclear. Therefore, the conclusions of this study must be accepted cautiously.

Thus, according to O'Connor (1986), usefulness of information in the comparative advertisement is greater for certain products than in the noncomparative advertisements, whereas McDougall (1977) claims that the usefulness of information can be raised by substantiating the claims in the comparative advertisements.

Interestingness of the Ad

Yet another measure of evaluation of the advertisement used in past investigations has been the perceived interestingness of the advertisement. Shimp and Dyer (1978), in the study described earlier, found that the interest in the advertisement was higher for comparative advertisements than the noncomparative advertisements. An additional investigation on the interest in the advertisement has been reported by Lamb, Pletcher and Pride (1979). Analyzing the effects of intensity and directionality of comparative advertisements on their perceived interestingness,

the researchers found a significant effect for directionality on interest in the advertisement. Additional analysis indicated that the differentiative comparative advertisement was more interesting than the associative advertisement.

Offensiveness of the Comparative Ads

The offensiveness of comparative advertisements has been looked at by Wilson (1976). In the study described earlier, he reported that comparative advertisements were perceived to be more offensive than noncomparative advertisements. Significant differences were found between the types of advertisement treatment for several types of products. However, according to the author, the differences in response means across all products appeared to be more random than systematic. Thus, no conclusion can be made about what type of product may evoke positive or negative responses to comparative advertisements. However, a general conclusion can be made that the subjects evaluated comparative advertisements more negatively than noncomparative advertisements.

-

Informativeness of Advertisements

An inherent aspect of comparative advertising is that a comparative advertisement attempts to provide more information to consumers by providing comparisons between brands. Thus, a measure that could be of interest to advertisers is the perceived informativeness of comparative advertisements.

Earl and Pride (1980) found weak support for greater perceived informativeness of comparative advertisements. Their investigation, reported earlier, incorporated one- and two-sided advertisements as well as presence or absence of information on performance test results of the products. The advertisement with test results was more informative than that with no test results. Also, the perceived informativeness of comparative advertisements was higher than that of noncomparative advertisements, however, at a less conservative statistical significance. Thus, caution must be urged in accepting the results without any reservation. Also, it must be noted that there was no interaction between the type of advertisement (comparative and noncomparative) and test results information (present in or absent from the advertisement). Thus, one cannot conclude if comparative advertisements with claim substantiation are more informative than those without it.

To determine informativeness of comparative advertising by owners and nonowners of the compared brand in the advertisement, Pride, Lamb and Pletcher (1977) conducted a laboratory experiment by varying intensity and directionality of comparative advertisements. Working under the cognitive response framework, the authors conceptualized that variations in intensity and directionality, as defined earlier, should evoke different responses from owners and nonowners of the compared brand. Working on the notion that the owners of the compared brand may counterargue against the sponsor's brand more than nonowners, they speculated a difference between the perceived informativeness of the advertisements for the two types of consumers. Student subjects were exposed to mock print advertisements for a fictitious brand of a calculator compared with a well-known brand. The results showed no main effects of intensity as well as

directionality of comparisons for either owners or nonowners of the competitive brand.

It appears to be difficult to draw conclusions about informativeness of comparative advertising without any reservation. Earl and Pride (1980) report weak support for higher informativeness of comparative advertisements. Pride, Lamb and Pletcher (1977) report no impact of intensity or directionality of comparisons on informativeness. Overall, effects of comparative advertising on perceived informativeness remain uncertain.

Attitude Toward the Advertisements

A few investigations in comparative advertising have investigated consumers' attitude toward comparative advertisements.

With the objective of determining consumers' attitudes towards advertisements, Hackleman and Jain (1976) investigated the effects of type of advertisement, type of products used in the advertisements and subjects' sex. Subjects' attitude toward comparative advertisement was not found to be different from that toward noncomparative advertisement. However, subjects' sex and product type were found to influence the attitude toward advertisements. The analysis showed that females were found to have more favorable attitudes toward the advertisement than males. However, sex of an individual was not found to influence the attitude toward comparative or noncomparative advertisements. Further, for shopping goods, attitude toward comparative advertisements were more favorable than noncomparative advertisements. Unfortunately, due to lack of any explanation for the findings, the results of this study must be accepted tentatively.

Another investigation to determine the effects of comparative advertising on attitude toward advertisement was conducted by Camacho (1985). Working under the premise that consumers' knowledge about the product would influence their evaluation of the advertisement, she analyzed the effects of high as well as low level of knowledge. For both levels of knowledge, comparative advertisement was found to generate less favorable attitudes than noncomparative advertisement. Thus, regardless of subjects' prior knowledge, comparative advertisements were found to promote less favorable attitude.

Goodwin and Etgar (1980), on the other hand, report that measures of attitude toward comparative advertisements are no different from those for noncomparative or "brand X" advertisements. In their experiment, only one out of nine different measures of attitude toward advertisement was significantly influenced by the type of advertisement. Moreover, one other measure of attitude was significantly influenced by the type of products used in the advertisements. The authors concluded "as only a few of the main effects are statistically significant, inferences to be drawn are speculative."

It seems that the findings related to attitude toward comparative advertisements are not consensual. Jain and Hackleman (1976) and Goodwin and Etgar (1980) found no difference between the attitude toward comparative and noncomparative advertisements. On the other hand, Camacho (1985) reported less favorable attitudes toward comparative than noncomparative advertisements.

Attitude Toward the Sponsored Brand

The above discussed study of Goodwin and Etgar (1980) also reported findings related to the attitude toward the sponsored brand. Their investigation focused on the type of appeals (comparative, noncomparative and "brand X"), number of attributes in advertisements (two, five and seven) and type of products (functional or social utility). The results showed no difference between the attitude toward the sponsored brand in comparative or noncomparative advertisements whereas the attitude with "brand X" was marginally superior. In addition, the medium level of attribute information (i.e., five attributes) was able to raise the assessment of quality of the sponsored brand higher than low (two attributes) or high (seven attributes) levels of information. Finally, subjects' perceptions of the sponsored brand were more favorable for product classes providing social utility than for those providing functional utility.

Consumers' attitudes toward the sponsored brand in comparative advertisement have also been investigated by Belch (1981). With type of advertisements (comparative and noncomparative), message sidedness (one- and two-sided) and message repetition (one, three and five exposures) as the treatments, the study analyzed the effect on the attitude toward the sponsored brand. The only finding of interest was that the highest level of exposures (i.e., five exposures) generated negative attitude toward the sponsored brand.

Finally, an investigation examining the effects on the attitude toward the sponsored brand has also been reported by Gorn and Weinberg (1984). In the study described earlier, the authors varied the type of advertisements in the presence (or absence) of a leader advertisement for three different products. The results

indicated no difference in attitude toward the sponsored brand due to comparative or noncomparative advertisements. However, in the absence of a leader advertisement, the attitude was more favorable. Also, the main effect of product was significant for the attitude toward the sponsored brand. Further analysis showed that attitude toward the sponsored brand of a type of product (toothpaste) was significantly lower than that toward the competitive brand. However, no explanation was offered about these findings nor for the lack of significant findings in other treatment conditions.

In summary, Goodwin and Etgar (1980), Belch (1981) and Gorn and Weinberg (1984) found no difference between the attitude toward the sponsored brand in comparative and noncomparative advertisements.

Summary of Findings on Affective Measures

To summarize, there is no consensus on the effect of comparative advertising on affective measures. Regarding the believability of advertisements, several researchers contend that comparative advertising carries lower believability than noncomparative advertising. Among them are Prasad (1976), Wilson (1976), Shimp and Dyer (1978), and Murphy and Amundsen (1981). However, Golden (1981) found no difference between the two types of advertisements. Further, Lamb, Pletcher and Pride (1979) claim that it can be raised with low intensity comparative advertisements. On the other hand, O'Connor (1986) found that believability of claim is product dependent.

O'Connor (1986) provides a similar conclusion regarding the usefulness of comparative advertisements. While his study found this measure to be dependent

on the type of product, McDougall (1977) found that such advertisements are more useful to consumers if the claims are substantiated. Further, Shimp and Dyer (1978) suggest that comparative advertisements are more interesting. However, Lamb, Pletcher and Pride (1979) argue that these advertisements are more interesting if they are differentiative. The findings on informativeness of comparative advertisements are also not clear. Pride, Lamb and Pletcher (1977) report that a low intensity of comparisons in advertisements has higher perceived informativeness than a moderate or high intensity of comparisons. Earl and Pride (1980) report that comparative advertisements have higher informativeness than noncomparative advertisements, but the role of claim substantiation in advertisements could influence the informativeness.

Similarly, the findings regarding the attitude toward the advertisement or the brand also remain equivocal. Hackleman and Jain (1976) found favorable attitudes toward comparative advertisements for shopping goods. Camacho (1985) found the evaluation of comparative advertisements to be less favorable than noncomparative ads.

Belch (1981) reported that the attitude toward the sponsor's brand was unfavorable as the number of exposures increased. On the other hand, Gorn and Weinberg (1984) claim that the attitude toward the sponsor's brand is favorable under the condition of absence of advertising by the market leader. The results of these and other investigations on conative measures also exhibit no clear evidence for or against comparative advertising, as shown in the next section.

Effect of Comparative Advertising on Conative Measures

Several conative measures have been used in the investigations of comparative advertising. These include purchase intention, and information search intention, although by far, purchase intention has the popular conative measure used by the researchers. Moreover, sales response as a behavioral measure has also been used in a few investigations. Included in this section are the discussions of the studies that have used these measures.

Purchase Intention

Golden (1976, 1979) investigated the relative effects of comparative and noncomparative advertising on purchase intentions for an anti-perspirant. She also investigated the effects of other variables which may affect consumer reactions to comparative advertisements, such as competitive positions of the advertised brands (three levels), claim substantiation (provided or not provided), and the theme of the advertisement (three variations). Responses of student subjects revealed that the purchase intention ratings elicited by the comparative advertisement are not significantly different from those of the noncomparative advertisement. The results were the same for the other three independent variables.

Shimp and Dyer (1978) also report similar findings on purchase intention. Incorporating two measures of conation, they measured the subjects' responses on the intention to patronize the advertised restaurant as well as the brand preference for a restaurant. The results indicated no difference between the effect of

comparative and noncomparative advertisements. The other independent variable, i.e., market position of the advertised restaurant, influenced the intention to patronize and brand preference. In both cases, the well-known leading brand carried more favorable responses. The authors speculated that subjects' awareness about the competing restaurant and lack of knowledge about the sponsored restaurant in the advertisement could influence their responses for patronization.

In addition, Goodwin and Etgar (1980) also investigated the effect of type of advertisement (comparative and noncomparative), type of product (social versus functional utility), and different level of information (low, medium and high information load) on the intention to purchase the promoted brand. The type of advertisement was not found to influence the purchase intention. However, the results showed a main effect for the type of product. Further analysis indicated that the purchase intention was higher for the product with greater social utility than functional utility. Unfortunately, the study does not report why the purchase intention may be higher for one type of product than for the other.

Working with the premise that subjects' knowledge about the product class could influence the effectiveness of comparative advertising, Camacho (1985) investigated the effects of advertisement and prior knowledge on purchase intention. The results showed that neither the type of advertisement nor the subjects' prior knowledge influenced their purchase intention.

Proposing that comparative advertising may be better suited for new products, O'Connor (1984) used advertisements of a shaving razor being introduced in the market. Further, contending that investigation of comparative advertising with mock advertisements may not have high external validity, the author used actual print advertisements as stimuli on adult females who were the target market of the

product. The study included type of advertisement (noncomparative, comparative and brand X) as an independent variable and analyzed its effect on the purchase intention. It was found to be significantly influenced by the advertisements. Particularly, the "brand X" message resulted in significantly lower purchase probability than the other two treatments.

In his later investigation (i.e., O'Connor 1986), the subjects were exposed to the comparative and noncomparative advertisements of cigarettes, long-distance telephone carrier and personal computers. Significant main effects were found for both the advertisement type and product category for purchase intention. The comparative advertisement was found to produce greater purchase intention than noncomparative advertisement for the long-distance telephone carrier. The interaction between the advertisement and the product was also significant, suggesting that the effect of comparative advertising is contingent upon the product category. As stated earlier in reference to this study, why comparative advertising may generate favorable conative response for certain products remains unanswered.

In summary, the consensus regarding purchase intention due to comparative advertising is absent in these investigations. Golden (1976, 1979), Shimp and Dyer (1978), Goodwin and Etgar (1980) and Camacho (1985) indicate no difference in purchase intention due to comparative and noncomparative advertising. O'Connor (1984) found lower purchase intention with brand X advertisements than comparative or noncomparative advertisements. O'Connor (1986) found greater purchase intention with comparative advertisements for specific product type.

Sales Response

Contending that the effectiveness of comparative advertising may not be limited to cognitive responses, Demirdjian (1983) included the sales response as the dependent variable in his field experiment. Extending Wright's (1973) cognitive response framework, he measured sales response from students after exposing them to actual comparative and noncomparative advertisements of two equally priced brands of pen. After administration of the stimulus, the subjects were given coupons for both brands to be redeemed toward the purchase of either brand. Analysis of sales data revealed that the subjects exposed to comparative advertisement purchased more pens (both brands combined) than those exposed to noncomparative advertisements. Also, the sponsor's brand was purchased more than the compared brand by the subjects exposed to comparative advertisements. Therefore, the author concluded that comparative advertising may strongly influence purchase behavior and may be beneficial to the sponsor. However, due to the lack of information about the control of other factors possibly influencing the behavior of the subjects in this field experiment, the results must be regarded cautiously.

Information Search Intention

The other conative measure used in past research is information search intention (Camacho 1985). As discussed earlier, this study analyzed the effects of type of advertisement and subjects' prior knowledge of the product class on their intention to search for more information about the sponsored brand. It may be noted that the study did not provide any hypothesis related to subjects' information

search intention. Consequently, the explanations of the findings discussed below are unavailable.

The type of advertisement was not found to influence the information search intention. On the other hand, amount of knowledge was found to significantly influence the information search intention. The results showed that high prior knowledge subjects displayed greater information search intention with comparative advertisement than with noncomparative advertisement. However, low prior knowledge subjects had lower information search intention with comparative advertisement than with noncomparative advertisement. Due to the lack of explanations for these findings, the results may be accepted with caution.

Summary of Findings on Conative Measures

In summary, there is no consensus on the effect of comparative advertising on conative measures. Purchase intention as a response variable seems to carry mixed results. Golden (1979), Shimp and Dyer (1978), Goodwin and Etgar (1980) and Camacho (1985) suggest that there is no difference in the effect of comparative and noncomparative advertising for purchase intention. While O'Connor (1984) fails to provide any recommendation on purchase intention, O'Connor (1986) contends that the effect of the advertisement on purchase intention is contingent upon the type of product.

According to Camacho (1985), information search intention as the conative measure can be influenced by the comparative advertisements depending on consumers' prior knowledge. For people with high knowledge, it seems that comparative advertisements create less favorable response. However, for people

with less prior knowledge, comparative advertisements can raise their intention to search for additional information.

Summary of Findings Based on Cognitive Response Framework

As is amply clear from the preceding literature review, there is no consensus on the effects of comparative advertising. All the investigations reported so far were conducted with the cognitive response framework. Various measures have been used in the investigations of comparative advertising. The review grouped the measures into the categories of cognitive, affective, and conative measures. For all three types of measures, no consensus emerged regarding the effects of comparative advertising.

Besides cognitive response theory, another theory also has been applied to comparative advertising. However, unlike the cognitive response theory, this theory, i.e., attribution theory, has been applied in only one investigation. One possible reason for such lack of interest in applying attribution theory to comparative advertising may be that it does not provide for any dissimilar expectations from the cognitive response theory. The attribution theory and related investigation of the effects of comparative advertisements are reviewed next.

Attribution Theory and its Implications for Comparative Advertising

The basic idea of attribution theory is that people tend to balance a series of internal and external stimuli to determine or "attribute" the causes of events that they observe (Doob et al. 1969). Balancing occurs between internal, personality, or "dispositional" causes and external or situational causes (Ray 1982). Thus, when exposed to an advertising message, consumers would tend to reconcile themselves with the message by attributing the causes of advertising. That is, they might attribute the motivation for the message to the advertising situation (i.e., to external causes - "the advertiser is motivated by a self-serving purpose; therefore, the claims made in the advertisement are probably not true") (Swinyard 1981).

The effect of consumers' attributing advertiser's motivation to persuasive message may be more pronounced in the case of comparative advertising. When a sponsor attempts to show the superiority of his/her product over another, the consumers might attribute the motivation for the claim to the advertising situation (i.e., the advertiser is motivated by a self-serving purpose; therefore, the claims are probably not entirely true). Even though a claim might be made because it is an honest representation, the audience might infer that the claim is being made to delude the consumers into buying the product (Swinyard 1981).

In other words, an audience evaluating a comparative claim is likely to see "other plausible causes" as a significant motivation for favorable brand comparisons and hence, discount the "given cause" that the comparisons are entirely truthful. In essence, greater counterargumentation evoked by comparative claims is an

expectation suggested by the attribution theory. It may appear that the predictions about comparative advertising with the attribution theory may not be different from those with the cognitive response theory. Both theories view the recipients of messages as active information processors who generate responses to persuasive messages after consciously processing them. Both theories suggest greater counterargumentation with comparative advertising than with noncomparative advertising.

The above-mentioned proposition was investigated by Swinyard (1981) in a field experiment. Manipulating advertisement type (comparative and noncomparative) and sidedness (one- and two-sided) as independent variables, he elicited reactions from female heads of households to print advertisements of grocery stores. The variables were measures of counterarguing, advertisement credibility, acceptance of key claim, purchase intentions, and overt behavior. The results showed more counterarguing with comparative advertisements than with noncomparative advertisements. Correspondingly, the comparative advertisement was perceived as less credible than the noncomparative advertisement. Similarly, one-sided claims evoked more counterarguing and were perceived as less credible than two-sided claims.

Also, as expected, acceptance of claims in the comparative advertisement was lower than in the noncomparative advertisement. Although acceptance of claim was not influenced by sidedness, a significant interaction between the type of advertisement and sidedness was found. The author noted that the inclusion of two-sided claims in the comparative advertisement had a more favorable effect on acceptance of claim than the one-sided. Purchase intention and overt behavior of shopping (measured by redemption of coupons) failed to show any difference between one- or two-sided advertisements. Although purchase intention was not

affected by type of advertisements the overt behavior was. The noncomparative advertisement generated greater coupon redemption than comparative advertisement. Thus, the author concluded that while comparative advertising generates more counterarguing than noncomparative advertising, it can be lowered by two-sided claims. Moreover, the findings supported the anticipated effects of comparative advertising with attribution theory, although the effects themselves were not expected to be different from those with the cognitive response theory.

As discussed above, both theories, the attribution as well as the cognitive response theory, fail to conclusively recommend for or against the use of comparative advertising. Both theories lead the researchers to the premise that the specific responses produced as a result of exposure to advertisements are due to the cognitive processes undertaken by the consumers. Therefore, if the consumers' cognitive responses are understood, the effectiveness of comparative advertising can be measured.

In spite of examining the effects of comparative advertising in conjunction with several other independent variables on various dependent variables, no conclusive evidence of its superiority (or lack thereof) emerges. Thus, a potential researcher or practitioner has no specific guidelines about its effectiveness.

Issues Emerging from Comparative Advertising Literature

It is evident from the preceding discussion that cognitive response theory has been the dominant theoretical framework used in the investigations of comparative advertising. Consumers are believed to consciously process the message upon exposure to comparative or noncomparative advertisements. Their reactions are

captured as support or counterarguments in favor of or against the advertisement or the advertiser. With variations in different aspects of comparative advertising, the researchers have investigated the effects of comparative advertisements on a variety of dependent variables.

In spite of the abundance of literature on and increasing practice of comparative advertising, there seems to be a void of understanding about the effects of comparative advertising. While some researchers appear to advise against comparative advertising, others appear to be neutral about it. Few researchers find limited benefits of such advertising. Clearly, there is no consensus in literature on the effects of comparative advertising. Obviously, the cognitive response theory (as well as the attribution theory) has not been very effective in accurately predicting the effects of comparative advertising.

As the preceding review shows, there appears to be no particular measure of the effect of comparative advertising without any disagreement on it. The equivocal nature of findings on comparative advertising raises serious questions about the understanding of the phenomenon of comparative advertising.

The problem of disagreement on findings could stem from several sources. First, a few investigations in comparative advertising appear to have been conducted solely with the perspective of practical application of comparative advertising (e.g., Demirdjian 1983; Levine 1976; Murphy and Amundsen 1981). While such a perspective in conducting research may, indeed, be commendable, the published reports of these studies indicate little conceptualization behind comparative advertising. The findings of these studies, therefore, cannot be reconciled with those of others.

The second reason for the disagreement of findings could be due to the conceptualization itself. As stated earlier, much of comparative advertising

research is based on cognitive response framework which inherently assumes that consumers are actively engaged in processing the information. However, consumers do not actively process the information all the time (Assael 1987). For instance, at times consumers process the information passively. Another factor might be the consumers' desire to simplify their information processing tasks and thereby reject active information processing. It seems that the cognitive response framework cannot account for all the situations in processing persuasive messages. Thus, use of cognitive response framework in explaining the effects of comparative advertising leaves a void in its conceptualization due to the situations not explainable with the cognitive framework.

Another possible reason for the disagreement of findings is related to dependent measures used in comparative advertising research. The cognitive response framework suggests the arguments and thoughts that consumers generate as a response to exposure to advertisements as appropriate measures. Besides measuring the arguments generated by comparative advertising, researchers have used a variety of measures as discussed in the review. The other measures (e.g., brand awareness, believability of claims) are believed to be mediated by the cognitive responses. Although it is not inappropriate to use such measures, the expectations about these measures, based on a theory that cannot fully explain the effects, cannot be strong.

Finally, the majority of the investigations in comparative advertising have used single-item questions to measure consumers' responses on dependent variables. For instance, purchase intention has been operationalized by asking the subjects one question: "How likely are you to purchase the (advertised) brand?" Single-item scales to measure a construct are notoriously poor in their measurement (Peter 1979). To increase reliability of measures, researchers have long advocated using

multiple question items (Peter 1979, Peter and Churchill 1986). Perhaps by using multiple measures for the same dependent variable in comparative advertising research, confidence in findings can be raised.

This research addressed the issues raised above. It is based on a conceptualization with another theoretical framework. Using principles of categorization, the phenomenon of comparative advertising is reconceptualized. The categorization theory offers an alternative framework that can account for situations that the cognitive response theory cannot. A review of categorization theory is presented next, to assist its application to comparative advertising.

Categorization Framework to Process Information

Categorization is the process of identifying an object as a member of a class, similar to other members and dissimilar from non-members (Fiske and Pavelchak 1985). Categorization theory (Mervis and Rosch 1981, Rosch 1978) states that people divide and group objects into categories for an efficient understanding and processing of the environment. By categories is meant a number of objects that are considered equivalent (Rosch 1978). Categories represent cognitive structures containing instances of the class of objects (Alba and Hutchinson 1987; Fiske and Pavelchak 1985). Categorization theory further suggests that objects can be grouped hierarchically at varying levels of specificity. Several studies have found three level hierarchies of common objects encompassing the superordinate, the basic and the subordinate categories (e.g., cars, sports cars, Corvette) (Cantor et al. 1982; Hunn 1976; Rosch et al. 1976; Tversky 1977). Categorizing an object allows

an individual to apply to the object his knowledge and expectations about the category. Categorization theory is based on two principles. The first principle has to do with the function of category systems and asserts that the task of category systems is to provide maximum information with the least cognitive effort. The second principle has to do with the structure of the information so provided and asserts that the perceived world comes as structured information rather than as arbitrary or unpredictable attributes (Rosch 1978).

These two principles, a drive toward cognitive economy combined with structure in the perceived world suggests a level of categorization as the predominant way of structuring concepts. Psychologists (Rosch et al. 1976) have argued that the most basic level of categorization is that at which the information value of attribute clusters is maximized. At this level, called basic level, objects tend to be spontaneously named and discrimination between objects tends to be easier than at other levels. This is the level at which within-category similarity is maximized relative to between-category similarity (Alba and Hutchinson 1987; Mervis and Rosch 1981; Rosch et al. 1976).

Categories one level more abstract than basic are called superordinate categories, whereas categories one level less abstract than basic are called subordinate categories. Superordinate categories are the most inclusive and least specific, whereas subordinate categories are the least inclusive and most specific. According to Sujana and Dekleva (1987), the product type level constitutes the most basic level at which most information may be organized. At this level, the categories are rich and distinct. Product class categories are more inclusive (abstract) and less specific and therefore constitute superordinate categories. Finally, brand-level categories are less inclusive (abstract) and more specific (than product-type level), and therefore constitute subordinate categories.

As an illustration, one could group a set of objects into a more abstract (i.e., more inclusive) category, such as computers or into a less abstract (i.e., less inclusive) category, such as personal computers or mainframe computers, or into least abstract (i.e., least inclusive) categories such as IBM PC or Apple PC. For this example, personal computer would be the basic level category as the within-category similarity is maximal relative to between-category similarity. For the category of computers, personal computers and mainframe computers are very distinct subcategories, but various brands of personal computers have many shared attributes and few distinct ones. Such an analogy receives substantial support from several studies (Mervis and Rosch 1981; Rosch 1978; Sujan and Dekleva 1987). These studies have used a variety of objects such as dogs, cats, cameras, and cars, among others. When different products are used, product class, product type, and brand represented superordinate, basic and subordinate level categories, respectively (Sujan and Dekleva 1987).

Further, expertise is linked to the knowledge of categories (Sujan 1985). Expertise is the ability to perform product-related tasks successfully (Alba and Hutchinson 1987). Because of high levels of repetition and a well-developed category structure, experts can process information more efficiently (Fiske et al. 1983). Dougherty (1978) and Rosch et al (1976) found that the basic level itself becomes more specific as expertise increases. For example, experts may categorize products at the more specific brand level. Thus, upon exposure to a car, an expert may spontaneously label it as a BMW whereas a novice may merely describe it as a car (Alba and Hutchinson 1987).

The categorization theory further suggests that an individual's reactions to a stimulus consist of an initial categorization stage and a second affect-generation stage (Fiske and Pavelchak 1985). If the stimulus can be categorized as an example

of a previously defined category, the affect associated with the category can be quickly retrieved from memory and applied to the stimulus (Cohen 1982; Fiske 1982). If the stimulus cannot be categorized as an example of a previously defined category, the individual may be forced to evaluate the stimulus on attribute-by-attribute basis. The affect generated in this piecemeal mode takes more time than in the previous mode i.e., category-based mode (Fiske and Pavelchak 1985). Studies reported by Fiske (1982), Fiske and Pavelchak (1985) and Sujan (1985) substantiate the efficiency of category-based responses to stimulus. Moreover, Sujan (1985) demonstrated that expertise influences evaluation processes of individuals. Expert consumers, when presented with information that matches their knowledge, tend to develop affect in the category-based mode. However, discrepant information results in piecemeal processing eventually leading to the affect. On the other hand, novices use category-based processing and develop global affect regardless of whether the information is consistent with the category expectations.

To summarize, people group products into categories for an efficient understanding and processing of the information. The products can be categorized at product class, type, and brand level. When presented with information matching their category-based expectations, experts develop affect in the category-based mode. Mismatch of information leads to affect development in piecemeal mode. Novices pursue the category-based mode irrespective of the consistency of information with their category expectations.

Conceptualization of Comparative Advertising with the Categorization Perspective

Categorization simplifies an individual's processing task of a potentially overwhelming number of stimuli in the environment (Walker, Swasy and Rethans 1986). The essence of categorization lies in the process of identifying an object as a member of its class, similar to other members and dissimilar from nonmembers (Fiske and Pavelchak 1985). Research indicates that knowledge in a given category is internally structured around a typical (i.e., exemplar) or an ideal (i.e., prototype) instance which captures the meaning of the category (Cantor, Mischel and Schwartz 1982). Categorization of a new stimulus is accomplished by exemplar or prototype matching and is a function of the degree of similarity between the new stimulus and the category exemplar or prototype. Processing the stimulus information by either route provides individuals with a set of expectations (Sujan 1985).

Comparative advertising may be undertaken by marketers to achieve one of two purposes: to associate the brand with other brands or to disassociate it from the other brands. At times, the marketers may want to bring their brand closer to other brands or distance it from other brands. This may be accomplished in an advertisement by pointing out the similarity of the sponsored brand to or dissimilarity from other brands. In essence, the comparative advertisement may seek a repositioning of the sponsored brand in the minds of the consumers. The attempts to reposition the brand suggests recategorization of the brand to the consumers.

Further, as stated above, the categorization process will provide the individuals with a set of expectations about the challenger. These expectations would be determined by the individuals' perceptions of how similar (or dissimilar) the challenger is to (or from) the compared product. Additionally, their perceptions should influence the degree of confidence in their expectations. If the consumers have high prior knowledge of the product category, their confidence may be higher than that of the consumers with low prior knowledge.

The benefits of comparative advertising may be enhanced by appropriate format of the comparisons between products. Lamb, Pride and Pletcher (1978) identified directionality of comparisons as a factor influencing the acceptance of message by the consumers. Directionality reflects the degree to which statements in an advertisement stress the similarities or the differences between the sponsored brand and the competing brand(s). Directionality of a comparative advertisement is a function of the degree of its association or differentiation between the brands. However, to distinguish itself from the competing brands, the challenger must demonstrate its superiority over other brand(s) on at least one attribute. The challenger must therefore associate with as well as differentiate from the competing brand(s).

Consistent with the categorization framework, successful application of comparative advertising can be influenced by its directionality. To be considered in the same league with the leader, the challenger must emphasize the similarities between the brands. The psychological distance between the leader and the challenger may be reduced if the challenger can show that it provides the same benefits as the leader and further offers at least one unique additional advantage. Thus, comparative advertisements that have most of the references pointing out the similarities between the brands with some unique additional features may have a

higher potential of bringing the challenger close to the leader. That is, associative comparative advertisements may be more beneficial to the sponsor than differentiative comparative advertisements. This may be true irrespective of how long the challenger has been on the market. If the sponsor's brand is a new entrant in the market, one of the major advertising objectives may be to get visibility comparable to the leading brand. A strategy that can place the challenger in the same league with the leading brand may be called for. An associative comparative advertisement may be expected to yield positive results in such a case. Further, if the challenger is an existing brand on the market, one of the advertising objectives may be to reduce the psychological distance between the challenger and the leader. Again, this may call for an associative rather than differentiative comparative advertising strategy.

Furthermore, single versus multiple brand comparisons and the consistency in the identified brands are additional issues in comparative advertising that must be addressed by the researchers. Casual observation of the comparative advertising practice indicates frequent inclusion of comparison between more than two brands. Multiple brand comparison advertisements must deal with the issue of consistency in the identified brands because it can influence consumers' processing and resulting perceptions of the challenging brand. A comparative advertisement may be consistent if it includes products that are homogeneous and congruent with a consumer's ideas regarding category membership (c.f. Walker, Swasy and Rethans 1986). An inconsistent comparative advertisement may include products that are less homogeneous and, yet representative of product class category.

To illustrate, an advertisement comparing the Mazda 929 with a Mercedes 300 and a BMW 325 may be consistent because Mercedes and BMW cars are generally regarded as luxury cars. However, if the Mazda 929 were compared with the

Mercedes 300 and a Chevrolet Celebrity, it would be an inconsistent comparative advertisement. While all these cars may belong to the same category of family cars, the latter two cars are not generally perceived as sharing the category of luxury cars. If the category set of comparison brands is consistent, as in the first example, category-based processing may result. The affect associated with the category of luxury cars may be applied to the challenger, bringing it closer to the other brands. However, in the case of inconsistent comparative advertisement, piecemeal processing may result. The resulting affect for the challenger may depend on the degree of inconsistency in the comparison.

In addition, positioning of a product in a noncomparative advertisement relative to a comparative advertisement may influence how the promoted brand may be categorized. The critical distinction between comparative and noncomparative advertisements is that comparative advertisements name or suggest the competing brand(s) whereas noncomparative advertisements do not. The noncomparative advertisements make a supportive case for the sponsored brand only. This difference can be viewed in terms of category levels (Sujan and Dekleva 1987). Noncomparative advertising may position a brand as a member of a broad product class (e.g., Mazda 929 ... a fine automobile) or a more specific product type (e.g., Mazda 929 ... a fine family car). Comparative advertising can present cues at the brand level by comparing the sponsored brand with a well-known brand (e.g., Mazda 929 ... comparable to Mercedes 300). Since the sponsored brand is relatively less well-known, any inferences formed about attributes not mentioned will depend on the cues present in the advertisement, and one cue is the category level at which the cue labels are found (Sujan and Dekleva 1987). The categorization theory suggests that the effects of providing a cue at the brand level (e.g., comparing Mazda 929 to Mercedes 300 as in a comparative ad) will be more pronounced

relative to a noncomparative advertisement if the product is presented within a broad product class (e.g., presented as a car). However, a comparative advertisement may not reflect as great a difference with regard to a noncomparative advertisement that positions a product at the product-type level (e.g., as a family car) because a noncomparative product-type advertisement would contain more basic category information about the product than noncomparative product class advertisement. Indeed, Sujan and Dekleva (1987) substantiate the benefits of comparative over noncomparative advertising that presented a brand within a broad product class.

Another issue worthy of consideration in comparative advertising is the sidedness of the message. The sidedness of an advertisement is known to influence consumers' reactions to comparative messages (e.g., Belch 1981; Etgar and Goodwin 1978; Swinyard 1981).

The sidedness of a message derives its importance in that it may influence the extent to which consumers can undertake categorization. In order to understand the ramifications of the sidedness of comparative advertisements, it is necessary to understand one-sided advertisements, two-sided advertisements and two-sided comparative advertisements. A one-sided advertisement presents a supportive case for the sponsored brand and is therefore equivalent to a noncomparative advertisement. A two-sided advertisement attempts to present a balanced case for the sponsored brand by exhibiting the strengths while admitting a few weaknesses of the brand. On the other hand, a two-sided comparative advertisement exhibits superiority of the sponsored brand over the competitive brand on a few attributes and admits a few relatively less important shortcomings. Thus, a two-sided comparative advertisement implicitly recommends a reevaluation of the competitor based on the attributes suggested in the advertisement. If consumers' perceptions

of the importance of attributes are congruent with those implied in the advertisement, the evaluation of the sponsor's brand may be favorable. An important feature of such an evaluation process is that the overall evaluation is derived in piecemeal mode. As demonstrated by Sujan (1985) and Fiske and Pavelchak (1985), piecemeal judgments are slower than category-based judgments. Thus, even though categorization may be undertaken by consumers to simplify their processing tasks, if the comparative advertisement is two-sided, it may reduce or eliminate the advantage of simpler processing by categorization. Therefore, while a two-sided comparative advertisement may appear to present a balanced case on behalf of the challenger, it would demand more time and effort on the part of consumers and would inhibit the categorization process.

Yet another issue in comparative advertising is related to the attribute information in comparative advertising. Typically, the investigations in comparative advertising have used advertisements that compared brands on one or more attributes. However, as discussed earlier, comparisons need not be made on attributes for an advertisement to be comparative. Brands can be compared globally, without comparing them on attributes.

Whether brands are compared globally or on attributes would influence how consumers process the advertisement. If the advertisement presents attribute comparisons, consumers would be expected to process it in the piecemeal mode. On the other hand, if the advertisement makes global comparisons, without attributes, consumers would be expected to process it in the category-based mode. As consumers' mode of processing is known to influence their responses to the persuasive message (Sujan 1985), comparative advertisements with attribute cues or global cues may be expected to generate different responses from consumers.

Finally, comparative advertising research must address the explicit versus implicit nature of comparison. As discussed earlier, comparison between the products need not be direct, explicit. The consumers can be led to compare the promoted brand with another in the same category, and that may serve the purpose of comparative advertising. That is, comparison of the sponsored brand with another can be implied in the advertisement. This issue may be more relevant for experts than novices. Experts can bring to bear their well-developed knowledge of the category when processing the information presented in a stimulus. Thus, even if an advertisement does not explicitly compare the products, a suggestion to compare may initiate the process of comparison for experts. However, because novices lack high knowledge of the product or the category, they react differently than the experts.

In summary, it appears that the effectiveness of comparative advertising may be influenced by the various dimensions discussed above. These dimensions are summarized in Figure 1. Use of one or more of these dimensions in a comparative advertisement may be dependent upon the advertiser's objectives. For instance, if the advertiser wishes to promote a new brand in a market characterized by several brands, the advertiser may want to show how the new brand is similar to the others. In such a case, an associative comparative advertising may be appropriate. Thus, contingent upon the objectives of the advertiser, a comparative advertisement can be designed with some of these dimensions to achieve them. It must be noted that a particular comparative advertisement, while representing each dimension, may not be able to vary all the dimensions identified.

Explicit versus Implicit

Associative versus Differentiative

New versus Existing Products

One- versus Two-sided

Product Class versus Product Type versus Brand Level Comparisons

Single versus Multiple Brand Comparisons

Consistent versus Inconsistent Comparisons

Attribute versus General Cues

Figure 1

Dimensions of Comparative Advertising

Review of the Comparative Advertising Literature With Categorization Framework

Using categorization theory, Walker, Swasy and Rethans (1986) exposed student subjects to comparative and noncomparative commercials for beer. The comparative advertisement included implicit comparisons between the sponsor's brand and three other well-established brands which were considered to be prototype brands. Also, another comparative advertisement used in the study included implicit comparison between the sponsored brand and non-prototype brands. The authors hypothesized that consumers would perceive greater similarity between the sponsor's brand and the prototype brands as well as greater dissimilarity from non-prototype brands (versus noncomparative advertisements).

Support was found only for the second hypothesis. That is, when exposed to the comparative advertisement with comparison between the sponsored brand the non-prototype brand, the subjects found the sponsored brand to be less similar to non-prototype brands. It seems that the subjects were able to distinguish the sponsor's brand from other brands that did not appear to be comparable. However, an alternative explanation for this finding cannot be ruled out. First, the audio and visual contents of the advertisements were not identical (i.e., beyond the presence or absence of comparative cues). Second, the study included no information on how the advertisements comparing the sponsored brand with the prototypes and non-prototypes differed. Therefore, the results of this study cannot be accepted without reservation.

The categorization theory was also used by Sujan and Dekleva (1987) to investigate the effects of comparative advertising. Sujan and Dekleva (1987) used the type of advertisement and expertise (high and low) of the subjects as the independent variables. Three variations of advertisement served as stimulus. Along with the comparative advertisement, one noncomparative advertisement positioned the promoted brand as a member of a broad product class, whereas the other noncomparative advertisement positioned it as a member of a product type category. The participants of the study provided ratings related to perceived informativeness of advertisement, extremity of brand evaluations, perceived similarity of the challenger to the compared brand, and distinctiveness of the challenger from contrast brands.

For experts as well as novices, the comparative advertisement differed from product class noncomparative advertisement, resulting in greater perceived informativeness, greater perceived similarity to like brands and greater distinctiveness from contrast brands. Moreover, for experts but not novices, comparative advertisements resulted in more extreme brand evaluations than noncomparative advertisements.

On the other hand, for experts, the comparative advertisement differed from the product type noncomparative advertisement, resulting in greater perceived informativeness, more extreme brand evaluation, greater perceived similarity to like brands, and greater distinctiveness from contrast brands. Similar analysis for novices yielded no difference in perceived informativeness, extremity of evaluation, or distinctiveness from contrast brands. However, the novices perceived the sponsor's brand to be similar to the referent and the like brands.

The findings point to the critical role of expertise in inference generation, especially at the subordinate or i.e., the brand level. Comparative advertising

containing brand cues led to different responses for experts relative to both product-class and product-type level noncomparative advertising but for novices only in relation to product-class level noncomparative advertising. Sujan and Dekleva (1987) show that the effects of comparative advertisements are greater than a noncomparative advertisement presenting the sponsored brand as a member of a product class rather than product type.

The major contribution of Sujan and Dekleva (1987) is the examination of the effects of varying product cue level in the context of comparative advertising. While the Sujan and Dekleva (1987) study provides an impetus to understand effects of comparative advertising with the categorization perspective, two issues related to the consumers' processing of advertisements remain unresolved.

The Sujan and Dekleva (1987) study assumes category-based processing by consumers. Alternatively, consumers may process an advertisement on attribute-by-attribute basis, i.e., in piecemeal fashion. The mode of processing undertaken by consumers may be influenced by two factors. The first factor is the format of the advertisement. If a comparative advertisement compares the sponsored brand with another on specific attributes, the advertisement may be processed in the piecemeal mode. However, if an advertisement makes a global comparison (i.e., without the comparison on attributes), it may be processed in category-based mode.

The other factor influencing the mode of processing is the consumers' knowledge of product category. Depending on their knowledge, consumers may process an advertisement in piecemeal or category-based mode (Sujan 1985). To better understand the effects of comparative advertising, it is necessary to understand how consumers with differing levels of product knowledge evaluate

comparative advertisements that encourage piecemeal or category-based processing.

The second issue is related to the nature of comparisons in the advertisement. The Sujan and Dekleva (1987) study used a comparative advertisement with a comparison between two brands on specific attributes. As discussed in the previous section, variations in the explicitness of comparisons may also influence how consumers process advertisements. Well-developed category knowledge would assist experts, unlike novices, in processing the advertisements with explicit and implicit comparisons. This may suggest a different mode of processing for expert and novice consumers. An investigation incorporating explicit and implicit comparative advertisements may contribute to an understanding of how consumers with differing level of expertise respond to comparative advertisements. The present research will attempt to address the issues discussed above, examining how consumers with differing levels of product knowledge process comparative advertisements with different levels of explicitness of comparisons.

In summary, Walker, Swasy and Rethans (1984) report that consumers perceive greater dissimilarity between the sponsored brand and non-prototype brands in a comparative advertisement versus noncomparative advertisement. Sujan and Dekleva (1987) report that effects of comparative advertisements are higher in comparison to product class noncomparative advertisements than product type noncomparative advertisements. Further, the consumers' prior knowledge about the product category plays an important role in determining their responses to comparative advertising. However, to better understand the role of consumers' prior knowledge in their responses to advertising, it is prudent to address the appropriate aspect of prior knowledge, as discussed next.

Distinguishing Between Expertise and Familiarity

Traditionally, consumers' knowledge has been referred to as product familiarity or prior knowledge (Alba and Hutchinson 1987). That is, consumers are assumed to have some amount of experience with or information about particular products. It is well accepted that consumers' stored knowledge about a domain affects the processing of new information about that domain (Brucks 1986). That is, upon exposure to a stimulus, consumers' stored knowledge is brought to bear in processing the information.

Recent comparative advertising research exhibits efforts to measure the influence of consumers' knowledge on their responses to comparative advertising (i.e., Camacho 1985; Sujan and Dekleva 1987). Specifically, Camacho (1985) differentiated the subjects' knowledge level into high and low by asking the subjects questions related to their knowledge about product attributes, knowledge about brands available and experience with the product class. On the other hand, Sujan and Dekleva (1987), divided the subjects into experts and novices on a knowledge scale designed to measure their knowledge about a camera. The knowledge scale consisted of asking subjects various questions about features of cameras and photography. Depending on their scores on the scales, subjects were distinguished between experts and novices. It appears that both the studies measured subjects' knowledge on the basis of their experiences with the product, which represents one of the components of knowledge, as discussed below.

According to Alba and Hutchinson (1987), consumer knowledge has two components: familiarity and expertise. Familiarity is defined as the number of product-related experiences that have been accumulated by the consumers.

Expertise refers to the ability to perform product-related tasks successfully (Alba and Hutchinson 1987). It appears from the definitions of familiarity and expertise that advertising research manipulating subjects' knowledge may actually be concerned with subjects' familiarity and not their expertise. The preceding notion can be justified with two explanations.

First, an important distinction between expertise and familiarity is that the former includes performance of tasks whereas the latter does not. In advertising research, if subjects are exposed to an advertisement and their responses are sought using paper-and-pencil measures, the subjects do not need to perform any product-related tasks. Much of advertising research is pursued without having the subjects perform any product-related tasks. Consequently, manipulation of subjects' knowledge may be limited to subjects' familiarity and not their expertise.

The second reason to use subjects' familiarity, rather than expertise, as a measure of their knowledge is related to the dimensions of familiarity. According to Alba and Hutchinson (1987), product-related experiences include advertising exposures, information search, interactions with salespersons, choice and decision making, purchasing, and usage situations. Higher numbers of product-related experiences, as identified above, raise one's familiarity with a product but not necessarily their expertise. On the other hand, higher expertise of an individual would be indicative of ability for successful task performance. Thus, an individual may be able to perform various tasks related to the product without being aware of any communications related to the product or conducting any information search related to the product. That is, an individual may be able to perform product tasks without having gone through any decision making process for the product. Advertising research related to subjects' prior background and not their ability to perform product tasks, may indeed be measuring one or more dimensions of

familiarity. Therefore, if consumers' responses to advertisements are obtained upon exposure, as it generally is in advertising research, dimensions of familiarity may be more appropriate to measure than expertise.

Having reviewed investigations in comparative advertising with a categorization perspective and having examined the issues involved in comparative advertising, it is now possible to develop several hypotheses about comparative advertising and consumers' prior knowledge.

Hypotheses

This section uses conceptual arguments presented in previous sections to develop several hypotheses for this research. Hypotheses are developed to determine the main and interaction effects of explicitness of comparisons in an advertisement and consumers' familiarity with advertisement effectiveness. These hypotheses capture the differential impacts of noncomparative advertisements, explicit comparative, and implicit comparative advertisements, presenting either specific attribute or general information to consumers with various levels of familiarity.

Because comparative advertisements (explicit and implicit) provide more cues about an advertised brand, consumers should find them more informative than noncomparative advertisements. Moreover, because comparative advertisements (explicit and implicit) contain more information about the advertised brand, they should elicit more polarized evaluations than noncomparative advertisements. In addition, the presence of specific cues in comparative advertisements should

increase consumers' confidence in their evaluations and their intentions to purchase the advertised brand. Finally, explicit and implicit comparative advertisements will differ in their effects. Because implicit comparative advertisements avoid direct identification of competitive brand(s), intelligible comparisons are difficult. Therefore, consumers would find implicit comparative advertisements less informative than explicit comparative advertisements. Further, consumers' evaluations would not be polarized as much as with explicit comparative advertisements. Also, the consumers' confidence in their evaluations may be lower with implicit comparative advertisements.

The hypotheses listed below attempt to analyze the effects of different advertisements containing varying degrees of specificity of cues on consumers with differing levels of familiarity (Figure 2). The first three hypotheses describe the effects of differing levels of consumers' familiarity and varying degrees of explicitness of comparisons in advertisements. The final hypothesis further includes effects of specificity of cues in advertisements on consumers with differing levels of familiarity when they are exposed to noncomparative, implicit comparative and explicit comparative advertisements.

Hypothesis 1

Because the well-developed product category knowledge enables high familiarity consumers to conduct comparisons with little prompting from advertisement content, implicit and explicit comparative advertisements will be equally effective with them. Further, because extensive product category knowledge assists high familiarity consumers in making judgments, they can make

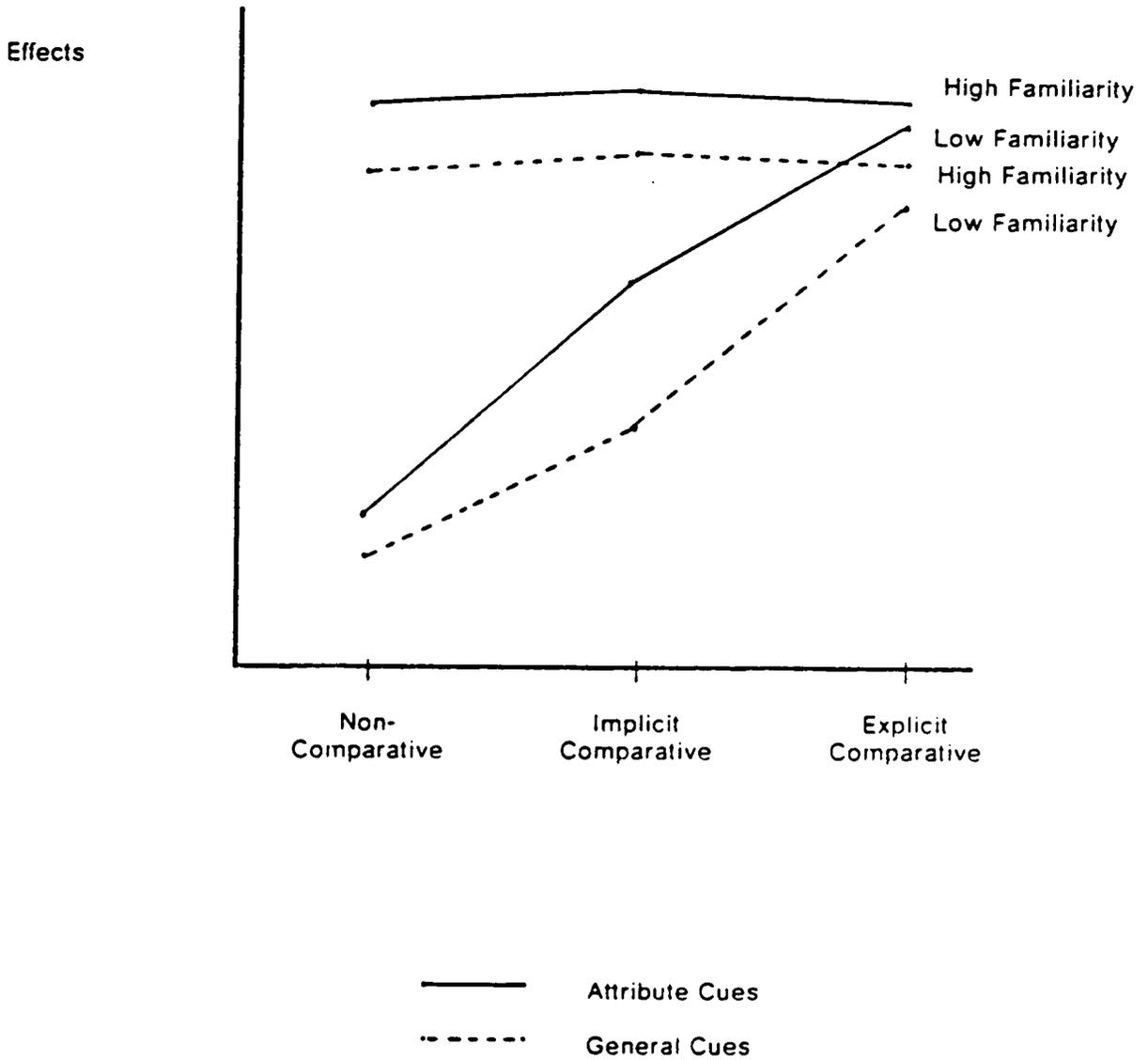


Figure 2
Hypotheses

evaluations on the basis of noncomparative advertisements just as effectively as with implicit and explicit comparative advertisements. Consequently, noncomparative advertisements would be as effective as implicit or explicit comparative advertisements for high familiarity consumers. In addition, regardless of attribute comparisons in an advertisement, the responses of high familiarity consumers to noncomparative, implicit comparative and explicit comparative advertisements would be similar. This should be true because well-developed product category knowledge permits high familiarity consumers to conduct comparisons with less assistance from an advertisement.

H1: For high familiarity consumers, noncomparative, implicit comparative and explicit comparative advertisements will be equally effective for both attribute cues and general cues on the following dimensions:

- a) perceived informativeness of the advertisement,
- b) extreme brand evaluations,
- c) confidence in brand evaluations,
- d) purchase intentions.

Hypothesis 2

Unlike high familiarity consumers, the low familiarity consumers should benefit from the comparisons in advertisements. Because low familiarity consumers do not have extensive prior knowledge, more explicit comparisons should be valuable to them. Thus, implicit and explicit comparative advertisements are expected to be

more effective than noncomparative advertisements. Also, because explicit comparative advertisements contain comparisons with a particular brand, they would be of greatest assistance to low familiarity consumers. Therefore, explicit comparative advertisements are expected to be more effective than implicit comparative advertisements among the low familiarity consumers.

H2: For low familiarity consumers, the more explicit the comparison in an advertisement, the more effective it will be for both attribute cues and general cues on dimensions (a) to (d).

Hypothesis 3

Because of the difference in their knowledge of product category, responses of high and low familiarity consumers would differ for various types of advertisements. This hypothesis further describes the interaction between type of advertisement and familiarity.

The level of product category knowledge would lead high and low familiarity consumers to respond differently to an advertisement. This is because high familiarity consumers can utilize their knowledge while processing an advertisement. Therefore, if an advertisement does not provide comparisons between brands, such as a noncomparative advertisement, it stands to reason that high familiarity consumers would be less disadvantaged than novices. Regardless of cues in a noncomparative advertisement, high familiarity consumers can bring to bear their knowledge to elicit specific attribute information. Therefore, high familiarity consumers would show greater effects than low familiarity

consumers when exposed to noncomparative advertisements, irrespective of presence (or absence) of attribute cues.

As availability of extensive product category knowledge assists them in processing advertisements, implicit comparative advertisements will be as effective as noncomparative advertisements among high familiarity consumers. An implicit comparative advertisement, without directly identifying the competitive brand, provides an additional source of information about the sponsored brand by suggesting comparison with other brand(s). Thus, implicit comparisons should have a greater impact on low familiarity consumers than noncomparative advertisements. However, implicit comparative advertisements will not be as effective among low familiarity consumers as among high familiarity consumers because they do not identify the competitive brand. Even if an implicit comparative advertisement provides attribute comparisons, responses of low familiarity consumers would be lower than those with high familiarity because the low familiarity consumers lack extensive product category knowledge. Finally, because an explicit comparative advertisement provides comparisons with a specific brand, the responses of low familiarity consumers would be similar to those with high familiarity.

H3: The more explicit the comparison, the more similar the responses of high and low familiarity consumers for both attribute cues and general cues on dimensions (a) to (d).

Hypothesis 4

Because of the difference in product category knowledge, high and low familiarity consumers will also exhibit different responses to various advertisements depending on whether they contain specific attribute or general information about the sponsored brand. This hypothesis describes the effects of cues in advertisements on consumers with different levels of familiarity.

Availability of extensive product category knowledge would enable high familiarity consumers to process an advertisement and assess the sponsored brand regardless of the presence of comparisons in an advertisement. Therefore, high familiarity consumers will be more affected by noncomparative advertisements than those with low familiarity. This should be true regardless of whether the advertisement contains attribute cues or general cues because high familiarity consumers, unlike low familiarity consumers, have available well-developed product category knowledge. Also, advertisements will be more effective among high and low familiarity consumers if they provide attribute information than if they do not. Therefore, a noncomparative advertisement that provides attribute information would show greater effects than the advertisement that provides general information regardless of consumers' expertise.

By suggesting comparisons with other brand(s), an implicit comparative advertisement provides an additional source of information to high and low familiarity consumers. However, because an implicit comparative advertisement does not identify the competitive brand, low familiarity consumers are not expected to find it as informative as those with high familiarity. Well-developed product category knowledge will enable high familiarity consumers to conduct comparisons

with little prompting from the advertisement. Therefore, high familiarity consumers should show greater effects than those with low familiarity when exposed to implicit comparative advertisements, regardless of specificity of cues. However, if an advertisement suggests comparison on specific attributes, it will be more effective among both high and low familiarity consumers than an (implicit comparative) advertisement which suggests no specific attribute comparisons.

By identifying the competitive brand, an explicit comparative advertisement provides additional category information to high and low familiarity consumers. Further, if an explicit comparative advertisement makes comparisons on specific attributes, it will be more effective among both high and low familiarity consumers than an (explicit comparative) advertisement without attribute comparisons. This is expected because comparison on attributes provides them with additional information. Moreover, when exposed to an explicit comparative advertisement with attribute comparisons, low familiarity consumers are expected to show greater effects than those with high familiarity consumers exposed to explicit comparative advertisement without attribute comparisons. This is expected because the incremental benefit of identifying the competitive brand to high familiarity consumers is small relative to those with low familiarity when the competitive brand is identified and comparisons are made on attributes.

Finally, with progressively increasing explicitness in comparisons, responses of high and low familiarity consumers should be similar. This is expected because the incremental knowledge increase for high familiarity consumers is small relative to those with low familiarity when comparative advertisements are explicit. Low familiarity consumers come close to knowledge level of experts as advertisements become explicit.

H4: For both high and low familiarity consumers, for noncomparative, implicit comparative and explicit comparative advertisements, responses to the advertisements with attribute cues will be greater than those to the advertisements with general cues, on dimensions (a) to (d).

Chapter Summary

The purpose of this chapter was to provide the conceptual foundation for this research and develop testable hypotheses about the effects of comparative advertising. Accordingly, the literature in the comparative advertising research stream was reviewed. This review highlighted the need to reexamine the phenomenon of comparative advertising.

A potentially viable theory (i.e., categorization theory) was reviewed and comparative advertising was conceptualized with the categorization perspective. On the basis of the conceptualization, several testable hypotheses were developed. These hypotheses aim to test the potential effects of noncomparative and explicit as well as implicit comparative advertisements for high and low familiarity consumers.

RESEARCH DESIGN AND METHODOLOGY

Overview

This chapter discusses the research design and the methodological procedures employed in this research. These procedures assisted in making the hypotheses amenable to empirical testing. Specific issues relating to the choice of the research method and setting, sampling procedures and data analytic techniques are addressed in this chapter.

The hypotheses developed in this research were tested with the help of a laboratory experiment using student subjects. Three independent variables, i.e., the comparisons in advertisements, cues in advertisements and the familiarity of the subjects were the three experimental factors in this research. These three factors were fully crossed using three levels of comparisons in advertisements (explicit, implicit and noncomparative), two levels of cues (attribute and general), and two levels of familiarity (high and low), producing twelve experimental conditions. Subjects, after being presented with the advertisements, were asked to provide

their reactions to various dependent variables. Their responses on the dependent measures were used in testing the hypotheses.

With this overall research plan in mind, this chapter is organized as follows. The first section describes the research design to be used in this research. A discussion of how the experimental treatments (i.e., cues and comparisons in advertisements) were used in conjunction with familiarity of the subjects is presented. Also included in this section are discussions of the procedures for carrying out the experiment as well as the sampling procedure. Specific aspects of the stimulus and assignment of the subjects to the experimental conditions are highlighted.

The next section discusses the statistical testing procedures and relevant assumptions. The chapter concludes with a discussion of the limitations and weaknesses of the proposed methodology and provides a summary of the chapter.

Research Methodology

The purpose of this section is to propose the methodological procedures for testing the hypotheses developed in the previous chapter. In conjunction with this objective, this section first provides a discussion of the research strategy and setting to be employed in this research. Next, the research design and procedures for manipulation of independent variables are presented. Further, this section describes the sampling procedure and focuses on the sample characteristics, the rules of assignment, the sample size and the power of the statistical tests. Finally, experimental procedures with details of the stimulus are discussed.

Research Strategy

This research investigated the effects of exposure to comparative advertising with variation in cues on the consumers with varying degrees of familiarity. Employing an experimental method would permit the researcher to create various levels of advertising treatment and differentiate the consumers according to their levels of familiarity. Also, the experimental approach would allow minimization of the effects of variables that are not of interest in the research. This can be done by selecting an appropriate sample, randomly assigning subjects to treatment conditions, presenting identical stimulus to all subjects in the same treatment condition and by preventing variations of extraneous factors, either by eliminating them or by holding them constant (Fromkin and Streufert 1976). Given these advantages of experiments and keeping in mind that the objective of this research was to capture the effects of comparative (versus noncomparative) advertising, the experimental method was believed to best enable the researcher to conduct the investigation.

Research Setting

Having decided on experimentation as the research strategy, it was necessary to determine the research setting for the investigation. Experimental procedures can be carried out either in the laboratory or in the field. Field experiments, however, are difficult to control, and competing explanations cannot be ruled out (Aaker and Day 1986, p. 263). In contrast, the controls afforded by the laboratory experiment enable a researcher to rule out alternative explanations (Fromkin and

Streufert 1976). Because the overriding goal of this research was to analyze the effects of different advertisements on consumers with different prior knowledge about the products, it was imperative that the experiment ruled out rival explanations caused by extraneous factors. With this consideration in mind, this research proposed to use a laboratory setting rather than a field setting due to the ability of the laboratory setting to provide greater confidence in ruling out alternative explanations.

Research Design

Design

Comparisons and cues in advertisement as well as familiarity of the consumers served as the three independent variables in this study. Consistent with the hypotheses discussed earlier, there were three levels of comparisons in advertisements (no comparison, implicit comparison, and explicit comparison), two levels of cues in advertisements (general and attribute), and two levels of consumers' familiarity (high and low) in the research design. In order to examine the main and interaction effects of the three factors, the three levels of comparisons in advertisements, the two levels of cues and the two levels of familiarity were fully crossed with each other in a 3 X 2 X 2 full-factorial between-subjects design (Figure 3). Thus, the subjects belonged to one of twelve experimental conditions and were exposed to only one treatment of an advertisement.

Level of Familiarity: High

Type of Comparative Advertisement

Cues	Non-Comparative	Explicit	Implicit
Attribute			
General			

Level of Familiarity: Low

Type of Comparative Advertisement

Cues	Non-Comparative	Explicit	Implicit
Attribute			
General			

Figure 3

Research Design

Independent Variables

To recapitulate, the three independent variables of this research were familiarity of the participants in the research, cues in advertisements, and comparisons in advertisements. Each variable with its various levels is discussed in this sub-section.

Familiarity

The first independent variable, familiarity, must be measured rather than manipulated. Because subjects' familiarity is difficult to manipulate in a laboratory environment in a relatively short period of time, it was measured by a scale (explained below) to differentiate between high and low familiarity subjects.

For the purposes of this research, the definition of familiarity, as forwarded by Alba and Hutchinson (1987), was adopted: Familiarity was defined as the number of product-related experiences accumulated by a consumer. According to Alba and Hutchinson (1987), there are several dimensions of product-related experience: consumers' advertising exposures, information search, interaction with salespersons, choice and decision making, purchasing, and product usage in various situations.

At a more inclusive level, the dimensions identified by Alba and Hutchinson (1987) can be combined into fewer, more abstract categories: awareness, decision making, and usage. Consumers' awareness about a product requires attending to and retaining product-related messages (Gilson and Berkman 1980). In general, the greater the advertising exposures consumers have had, the greater the awareness

they will have about the product and therefore, the greater the number of product-related experiences and familiarity.

Decision making encompasses information search, alternative evaluation, and choice (Berkman and Gilson 1986, p. 479-88). Consultation of various sources of information would be indicative of greater numbers of information searches undertaken by consumers, increasing their product-related experiences. Therefore, if consumers consult their friends, relatives, salespersons or look at magazines for information on products, their product-related experiences would be high. In addition, consideration of several brands of the product category and different attributes would also indicate greater extent of decision process, resulting in greater product-related experiences.

Finally, the usage dimension includes ownership of a product with or without its purchase, and its usage in various situations. The higher the number of times consumers have owned a product, the greater the number of their product-related experiences. Also, usage of a product in various situations increases product-related experiences.

Operationalization of Familiarity: Operationalization of familiarity involved determining the extent of consumers' product-related experiences. The degree of consumers' familiarity with a product was determined by a summated scale. The scale was designed to measure the three dimensions of consumers' product-related experiences. Each dimension was tapped by self-reported responses to several questionnaire items (see Appendix C). Based on their scores on the scale, consumers were categorized as familiar and unfamiliar with a particular product. The procedure to score subjects' responses is included at the end of Appendix C. While the details of refinement of the scale, leading to the final scale of familiarity

(Appendix C), are deferred to the next chapter, the highlights of the scale are discussed below.

Consumers' familiarity with products was measured by several questions. Initially, the familiarity scale provided an overall measurement of consumers' product-related experiences by asking them to list as many of their product-related experiences as they could.

Additional dimensions of familiarity included in the scale were consumers' awareness about a product, extent of decision making and usage of a product. These dimensions were measured by multiple open-ended and check-list questions. Specifically, awareness was operationalized as the number of advertisements recalled and the number of media vehicles consulted.

The decision making was operationalized as number of brands and attributes consumers consider in their evaluation of products, recency of information search and identification of various sources of information they consulted. Usage was operationalized as frequency and recency of purchase, identification of usage situations, and frequency of usage. Finally, a Likert scale was used to measure consumers' perceived familiarity with products.

Cues in Advertisement

The other independent variable, cues in advertisements varied at two levels. In one case, the advertisement contained general information about the sponsored brand. The general cues presented a supportive case for the sponsored brand without providing any information about the features of the brand. On the other hand, the advertisements with attribute cues provided information on several features of the sponsored brand. The features included in the advertisements were

obtained via pretests as discussed in the next chapter. Information on the sponsored brand included its low price and automatic features and was presented in table format in the advertisements.

Comparisons in Advertisement

Comparisons in advertisements varied at three levels. For each level of comparison there were two variations in cues as discussed above. The noncomparative version of the advertisement presented supportive arguments about the product. This advertisement exemplified the benefits of the brand. The noncomparative advertisement with attribute cues presented features of the brand whereas the one with general cues did not.

The explicit comparative advertisement positioned the sponsored brand by explicitly identifying the competitive brand. The name of the competitive brand was selected via pretests as discussed in the next chapter. Again, due to the variation in cues, there were two types of explicit comparative advertisements. The version with attribute cues contained the same attributes as those used in noncomparative advertisement and compared them with those of the competitive brand. The explicit comparative advertisement without attribute cues mentioned the name of the competitive brand and claimed the sponsored brand as superior to the competitive brand.

In contrast, an implicit comparative advertisement primarily presented a supportive case for the sponsored brand and, over and above invited the subjects to compare it with the competitive brand. As opposed to the explicit comparative advertisement, the implicit comparative advertisement did not name the competing brand but merely identified it as the leading brand. As with other noncomparative

and explicit comparative advertisements, there were two versions of implicit comparative advertisement with variations in cues. The implicit comparative advertisement with attribute cues presented the same attributes as noncomparative and explicit comparative advertisements. While presenting the information in comparative format, this advertisement did not identify the competing brand. On the other hand, the implicit comparative advertisement with general cues presented a supportive case for the sponsored brand without identifying the competitive brand. Intertwined with the issues of comparison between brands were the issues related to stimuli development, as discussed next.

Stimulus

One of the issues in manipulation of advertisement treatment was selection of medium. Between the choices of print and broadcast media, it was decided that the stimulus be a print advertisement rather than a television or radio commercial. The preference for a print advertisement over a commercial was justified with several reasons. First, having a television or radio commercial made to be used in the research involves considerable costs. Second, realism and guise of the stimulus can be an issue with the television and radio commercial unless the commercial is professionally made and embedded with other commercials in a television program. Obviously, using a (television or radio) commercial as a stimulus demands considerable resources, making print advertisements as stimuli an attractive alternative.

The next issue was related to use of a fictitious or an existing brand on the market. Because the subjects would have some prior knowledge of the products,

they also would have some prior expectations, as discussed in the previous chapter. If the brand used in the stimulus was an existing brand on the market, the subjects might possess information about it. This awareness of the brand and the prior knowledge about the product category, however rudimentary, could influence their evaluations of the advertisement and the brand identified in it. Therefore, to determine what type of advertisement with appropriate cues might be better suited for consumers with high or low familiarity without any confound due to their knowledge, it was decided that a fictitious brand should be used in the stimulus.

The final issue dealt with the type of product to be used in stimuli. This research involved six different versions of advertisements as stimuli for two kinds of subjects. Development of stimuli for the study was contingent upon the product used in the research. To add realism to the study and make its findings more meaningful, it was decided that products relevant to the subjects should be used in this research. Thus, it was deemed prudent to determine the type of product to use in the research *after* measuring subjects' familiarity with various products. The product that would best enable separation of subjects into high and low familiarity groups was to be used in the research. Determination of the type of product to use in the study was carried out in the first stage of the research, as discussed next.

Experimental Procedure

It was proposed that this experiment be conducted in two stages. The first stage consisted of measuring the subjects' knowledge about product categories. To ensure adequate representation of high and low familiarity subjects in the experiment, it was proposed that subjects' familiarity be measured well in advance

of the treatment manipulation. The advance knowledge of subjects' level of familiarity afforded two advantages. First, knowing subjects' familiarity with a product category enabled accurate determination of who the high and low familiarity subjects were. Naturally, it was necessary to know the subjects' identity while measuring their knowledge. This was not a problem due to the type of subjects used in this research as discussed later. Second, knowing the subjects' familiarity in advance afforded an opportunity to include a sufficient number of subjects in each treatment condition, while maintaining appropriate assignment to those conditions.

In conducting a laboratory experiment, sensitization of subjects is always an important concern (Emory 1980). This concern becomes more important in a study conducted in more than one stage, as in the case of this research. However, the procedure adopted for this experiment partially alleviated the concern of sensitization of the subjects. As discussed earlier, measures of subjects' familiarity with a variety of products, rather than one, were obtained in the first stage. Thus, the possibility of subjects' responses to dependent measures in the second stage of the research being influenced by their performance in the first stage was reduced. In addition, lapse of time between the first and the second stage reduced carry over effects as discussed below.

The second stage of the procedure involved manipulation of treatments on the subjects. It was decided to carry out this part of the procedure more than two weeks after obtaining measures of subjects' familiarity. Further, to overcome any bias in manipulation of treatments, it was imperative to assign the subjects to treatment conditions randomly. It was decided that subjects should be presented with two separate envelopes, one containing the stimulus and the other containing a questionnaire to collect their responses.

When completed, subjects were debriefed and thanked for their participation in the research. Debriefing included asking them what they thought about the experiment, whether they had guessed the hypotheses and whether they had followed the instructions properly. As a reward for participation in the research, the subjects were compensated by either an extra credit point in their courses or inclusion in a raffle for cash prizes.

Sampling Procedure

The sampling procedure was concerned with clarification of two issues. These issues were related to sample characteristics and sample size. Keeping in mind that the purpose of this research is to determine which advertising strategy may be better for individuals with a specific knowledge level about a product class, it is prudent to include those subjects in the experiment that permit strong tests of the hypotheses. It is proposed that students be used as subjects in this research. Further, the product to be used in the advertisement was relevant to the students, a factor favoring selection of students as subjects in the experiment.

The remaining question about the sample was one of size. The size of the sample determines the power of the statistical tests to detect the effects of treatments in the experiment. The power of a test refers to the probability that a statistical test is able to detect an effect when it is actually present (Cohen 1977).

Considering that this research included twelve cells where a treatment was to be manipulated (Figure 2) with different subjects in each cell, this research proposed using one hundred and eighty subjects with fifteen subjects in each cell.

With a significance level of .05 for one tailed test and with medium effect size ($\eta = .25$), the power of each statistical test was set at .80 (Table 8.4.4, Cohen 1977).

Dependent Measures

The hypotheses presented in the previous chapter involve dependent measures related to the advertisement as well as the brand. This section discusses how each dependent variable will be measured. The four dependent variables used in this research were perceived informativeness of an advertisement, extremity of brand evaluation, confidence in evaluation, and purchase intention.

Informativeness of an advertisement is defined as the degree to which an advertisement is informative. According to Earl and Pride (1980), perceived informativeness of an advertisement is the extent to which consumers can derive information from an advertisement. To the extent consumers can understand the advertised product and its characteristics, the advertisement is informative. Thus, the greater the amount of information consumers can obtain from an advertisement, the higher the informativeness of the advertisement.

Extremity of brand evaluation is defined as the degree to which brand evaluations are polarized. Evaluation of the sponsored brand serves as an indicator of affect developed by the consumers in response to the advertisement. Because cues in an advertisement assist consumers in evaluating the sponsored brand positively or negatively (Sujan and Dekleva 1987), the more specific the cues in an advertisement, the greater the polarization of brand evaluation, and the higher the confidence in the evaluations. Finally, purchase intention is defined as the likelihood of consumers' purchasing the sponsored brand.

Operationalizations of Dependent Measures: Typically, in comparative advertising research, the investigators have used a single measure for their dependent variables. This research used multiple measures for the dependent variables defined above. However, it must be acknowledged that the individual measures used in this research have been used in past investigations of comparative advertising.

Perceived informativeness of an advertisement was operationalized by asking consumers several questions about the advertisement on 7-point scales. These questions measured (a) how precise the advertisement was in giving information about the product (Sujan and Dekleva 1987), (b) how much information consumers obtained about product from advertisement (Earl and Pride 1980), (c) how much information about the product could consumers give to someone, if needed, and (d) how informative the advertisement was about the product (O'Connor 1984). These measures were tapped by questions 1, 2, 3 and 4 in the survey questionnaire (Appendix E). To compare the informativeness of various advertisements across consumers, the ratings on these four scales were averaged for each consumer to form one index of perceived informativeness.

Consumers' evaluation of the sponsored brand will be measured on seven 7-point scales. The scales had the anchors "Not at all" and "extremely" for each question. For instance, attractiveness of the sponsored brand as a measure of brand evaluation had a 7-point scale with "Not at all attractive" and "Extremely attractive" as anchors. Other indicators of brand evaluation used in this research were favorable (Sujan and Dekleva 1987), useful (O'Connor 1986), good (Sujan and Dekleva 1987), advantageous (Camacho 1985), beneficial (Shimp and Dyer 1978), and positive (Sujan and Dekleva 1987). These measures were tapped by questions 5, 7, 9, 11, 13, 15, and 17 in the questionnaire (Appendix E). To compare evaluation

of the sponsored brand across consumers, the ratings on these seven scales were averaged for each consumer to form one index of brand evaluation. Extremity of brand evaluation was computed as the deviation of the index from midpoint of the scale and could vary from 0 to 3. In addition, consumers' confidence in their evaluation was measured on one 7-point scale for each of the brand evaluation scales: extremely confident / not at all confident. This measure was tapped by questions 6, 8, 10, 12, 14, 16, and 18 in the questionnaire (Appendix E). Ratings on each confidence scale was also be averaged to form one index of confidence.

Finally, consumers' purchase intention of the sponsored brand was measured on three 7-point scales. Consumers' likelihood of purchasing the sponsored brand (Golden 1979) and willingness to purchase the sponsored brand (Shimp and Dyer 1978) were measured with anchors "very low" and "very high" on each scale. Last, consumers' consideration of purchasing the sponsored brand was measured on a "strongly disagree" to "strongly agree" scale. These measures were tapped by questions 19, 20, and 21 in the questionnaire (Appendix E). To compare purchase intentions of the sponsored brand across consumers, the ratings on these three scales was averaged for each consumer to form one index of purchase intentions.

The data obtained on the questionnaire were used to test hypotheses developed in the previous chapter. The statistical procedure to be used to analyze the data is discussed next.

Statistical Testing Procedure

The variables and the interactions to be investigated in this research can be represented in the model form:

$$Y_{ijkl} = \mu + \alpha_i + \beta_j + \gamma_k + (\alpha\beta)_{ij} + (\alpha\gamma)_{ik} + (\beta\gamma)_{jk} + (\alpha\beta\gamma)_{ijk} + \varepsilon_{ijkl}$$

where:

Y_{ijkl} is the value of the dependent variable for k th subject in i th level of the advertisement and j th level of expertise.

μ is the vector of the grand mean of dependent variable, such as informativeness of the ad, product evaluation and others.

α_i is the main effect of comparisons in the advertisement on the dependent variable.

β_j is the main effect of cues in the advertisement on the dependent variable.

γ_k is the main effect of familiarity on the dependent variable.

$\alpha\beta_{ij}$ is the interaction effect between the i th level of comparisons in the advertisement and j th level of cues in the advertisement on the dependent variable.

$\alpha\gamma_{ik}$ is the interaction effect between the i th level of comparisons in the advertisement and k th level of familiarity on the dependent variable.

$\beta\gamma_{jk}$ is the interaction effect between the j th level of cues in the advertisement and k th level of familiarity on the dependent variable.

ε_{ijkl} is the random error in the dependent variable for k th observation.

α_i is the level of comparisons in the advertisement, $i = 1,2,3$.

β_j is the level of cues in the advertisement, $j = 1,2$.

γ_k is the level of familiarity, $k = 1,2$.

The existence of main as well as interaction effects will be tested by analysis of variance. Usage of univariate or multivariate analysis of variance was to be determined by the intercorrelations between the dependent variables. A univariate analysis of variance may be appropriate when the intercorrelations between the dependent variables may be low. In contrast, a multivariate analysis may be required if the intercorrelations are high (Keppel 1982, p. 593). Further, in case of nonsignificant interactions and significant main effects, relevant means were compared as deemed necessary by appropriate tests.

Limitations of the Research

Weaknesses of the proposed methodology must be acknowledged. First, the research setting was contrived and artificial. The advertisements used in the experiment were not real although they were near print-ready. Second, the subjects were aware of the fact that they were participating in the research. However, because the major goal of the research was to determine the causal relationship between the independent and dependent variables, it demanded laboratory experimentation. Moreover, the pretest, manipulation checks and the debriefing after conducting the experiment helped assess the extent of this problem.

Finally, the methodology employed for this research may not permit generalization of the research results to other consumers, settings, or product categories. However, because this research is theory-based, the goal of achieving high internal validity overrides the concern for external validity in this research. As stated earlier, the major goal of this research was to determine the effects of comparative advertising. That is, to study the cause-effect relationships, high internal validity was essential at the risk of sacrificing external validity.

Chapter Summary

This chapter described the research design and methodology employed in this research. A 3 X 2 X 2 full-factorial design, with the three factors as the comparisons in advertisement (no comparisons, explicit comparisons and implicit comparisons),

cues in advertisements (attribute or general) and consumers' familiarity (high and low), was discussed for testing the hypotheses.

In addition, details of the sampling procedure as well as experimental procedure were explicated in this chapter. The statistical testing procedure presented the overall model that was tested in the research and discussed the analysis to be employed in this research. Finally, the limitations of the research were also identified.

RESULTS AND ANALYSES

Overview

This chapter discusses the pretests of the measurements of subjects' familiarity and dependent measures. It then describes the analytic procedures and the results of this study. The analyses were done on database described in the previous chapter. Specifically, information from the questionnaires for dependent measures described in Chapter III was coded into data files appropriate for use in either SAS or SPSSX statistical computer packages. A participant profile is described and delineation of the subjects into high and low familiarity subjects is discussed. Next, an assessment of reliability of the measures and development of scales of dependent variables are discussed. This is followed by discussions of tests of all hypotheses to assess the main effects of type of comparison, type of cues, and subjects' familiarity.

Development of Measures of Familiarity and Dependent Variables

This section discusses development and refinement of measures of subjects' familiarity with different products. Also included in this section are discussions of selection of a product used in stimuli for the experiment and the pretest of questionnaire with dependent measures.

The purpose of pretests to determine subjects' level of familiarity with a product was twofold. One, so as to facilitate distinguishing the subjects into high and low familiarity subjects, it was thought prudent to use a product that lent itself well to such a task. Second, use of students as subjects in the research warranted a product that was relevant to them. With these reasons, a few potentially useful product categories were identified as discussed below.

Initially, students in two classes of a marketing course were asked to list the products they either knew a great deal or very little about. Many product categories were mentioned by the students. These categories included pizza, beer, compact disc players, toothpaste, headache remedies, running shoes, ball-point pens, cameras, and bicycles. During informal discussions with students, fewer product categories emerged as probable choices to measure students' familiarity with them. These products were compact disc players, cameras, running shoes, and bicycles.

Due to various reasons, other products did not appear to lend themselves well to the measurement of subjects' familiarity. For instance, all the students appeared to be very familiar with pizza, beer and headache remedies. It was evident that finding a subject with low familiarity with these products would not be feasible.

Further, due to the low risk involved in purchasing these products, students did not seek any information about them prior to the purchase. Thus, keeping the dimensions of familiarity (as discussed in the previous chapter) in mind, it seemed that questions related to seeking information on these products, and owning them as well, would be moot. On the other hand, there appeared to be only a few students who felt very familiar with ball-point pens and toothpaste. Although these products are consumed regularly for limited use, the students noted that they almost never sought any information about them. Thus, the questions related to seeking information on these products and various situations where they could be used appeared to be moot. With these reasons, the search for finding an appropriate product to use in the experiment was limited to the categories of cameras, running shoes, bicycles, and compact disc players. Furthermore, the informal discussions with students revealed roughly equal numbers of them who felt they were very familiar or very unfamiliar with these four products. Thus, development of the familiarity measure, as discussed next, was limited to cameras, running shoes, bicycles, and compact disc players.

Measuring Subjects' Familiarity with Different Products

First Pretest

After the product classes were determined, the next task was to develop a measure of familiarity. At this early stage in pretesting, development of an appropriate measure of familiarity was of paramount importance. That is, the major purpose of this pretest was to develop a battery of questions that would measure

familiarity, without any concern to the length of the instrument. Consequently, on the basis of the conceptual definition of familiarity and its dimensions discussed earlier, several questions were developed to measure subjects' familiarity with four products, i.e., compact disc players, cameras, running shoes, and bicycles (See Appendix A).²

Operationalization of familiarity involved determining the extent of consumers' product-related experiences. The degree of subjects' familiarity with the products was determined by a summated scale. The scale was designed to measure the three dimensions of familiarity, i.e., awareness about products, extent of decision making, and use of the products. Each dimension was tapped by self-reported responses to several questionnaire items (see Appendix A). Finally, to determine subjects' perceived familiarity with the products, subjects were asked to indicate their overall familiarity with the products (Question 18, Appendix A). A discussion of how the other questions measure each dimension of familiarity is provided next.

Subjects' familiarity with compact disc players, cameras, running shoes, and bicycles was measured by several questions. Initially, the familiarity scale provided an overall measurement of subjects' product-related experiences by asking them to list as many of their product-related experiences as they could. Subjects with greater familiarity were expected to list a greater number of product-related experiences than those with less familiarity. Next, the subjects were asked to imagine a person who is highly familiar with these products and list everything that this person would know about these products. The purpose of this question was to obtain an additional overall measure of subjects' familiarity with the four products.

² It may be noted that the entire ensuing discussion of developing familiarity scale is limited to the four products, i.e., camera, running shoes, bicycles, and compact disc players.

Additional dimensions of familiarity, i.e., awareness about the product, extent of decision making, and usage of the products, were measured by multiple open-ended and check-list questions. As stated earlier, consumers' awareness about a product requires attending to and retaining product-related information (Berkman and Gilson 1987, p. 194). Thus, subjects who attend to and retain greater amounts of product-related information should have greater familiarity with products than those who do not. It was thought that subjects' attention and retention of product-related information could be manifested in a number of ways, such as the attributes used in evaluating the products (Brucks 1986), where the products can be purchased (Rao 1986), recall of the number of advertisements they were exposed to (Alba and Hutchinson 1987), and the media in which they were exposed to those advertisements (Alba and Hutchinson 1987). Highly familiar subjects should be able to identify a greater number of attributes as well as to list a greater number of stores that carried the products than those with less familiarity. Further, subjects with greater familiarity with the products should be able to recall a greater number of advertisements and the media in which they saw the advertisements than those with less familiarity.

Awareness was thus operationalized as the number of stores in Blacksburg area that carried the four products (Question 3, Appendix A), characteristics used in evaluating the products (Question 10), number of advertisements recalled (Question 16), and the number of media vehicles consulted (Question 17). Moreover, to further assess subjects' awareness about the products, three multiple-choice questions for each product were included in the questionnaire (Questions 19 - 30).

The extent of decision making, the next dimension of familiarity, encompasses information search, alternative evaluation, and choice (Berkman and Gilson 1986,

p. 479-88). Thus, subjects who undertake a greater amount of information search and evaluate various alternatives before choosing a particular brand should have greater familiarity with the products than those who do not. It was thought that subjects' extent of decision making could include whether they would seek information about the products before making a purchase, where they could get the information (Alba and Hutchinson 1987), the recency of their information search (Brucks 1986), and the consideration of various brands of the products (Rao 1986).

The extent of decision making was thus operationalized by asking the subjects to list the brand names of the products (Question 11, Appendix A), if they would look for information about the products (Question 12), the sources of information they would consult (Questions 13 and 15), and the last time they searched for information about the products (Question 14).

Finally, the usage dimension of familiarity includes ownership of the products with or without their purchase, and its usage in various situations (Alba and Hutchinson 1987). It was thought that subjects' usage of products could include their ownership of the products (Rao 1986), the number of times the products have been purchased (Rao 1986), the recency of purchase (Brucks 1986), the person for whom the product was purchased, the frequency of usage (Brucks 1986), and various situations of usage (Brucks 1986). Subjects who own the products and frequently use them in various situations should be more familiar than those who do not. Also, the subjects who have purchased the products once or more should be more familiar than those who have not.

Usage was, thus operationalized as the number of situations where the products could be used (Question 4, Appendix A), how often the subjects use the products (Question 9), the number of times they have purchased the products (Question 5), how recently they had purchased the products (Question 6), for whom

they purchased the product (Question 7), and whether they own products currently (Question 8).

The first pretest of this questionnaire was done in a marketing class using a sample of six students, who were given extra credit for the course. Subjects' average completion time was recorded as 36 minutes with the understanding that it would be an inflated measure because they were provided with instructions in addition to merely answering the questions. Although subjects' completion time, per se, was not important for this research, it was used as a surrogate indicator of their possible lack of responsiveness to the questions. Keeping in mind that the objective of this pretest was to develop a pool of questions that would measure familiarity, the subjects were asked to comment, critique or make suggestions on individual questions, in addition to filling out the questionnaire itself. The subjects willingly made several observations to the questionnaire which are discussed next.

Refinement of Familiarity Measure: The subjects were debriefed after completing the questionnaire. The unanimous opinion emerging from the debriefing of the subjects was related to length of the questionnaire. All the subjects expressed fatigue and admitted a tendency to guess answers, especially in the later half of the questionnaire, indicating a need to reduce the number of questions.

Based on the subjects' comments, the purposes of several questions were closely scrutinized. In each case, with reasons discussed below, it was decided to eliminate those questions from the next pretest of familiarity. Specifically, the question that asked the subjects to imagine a person highly familiar with the products and to list all that this person would know about the products (Question 2, Appendix A) was problematic. The subjects indicated that they could not imagine such a person and were reiterating their personal experiences with the product

(which was asked in Question 1). Therefore, the question about imagining a person highly familiar with the products was not found to be valuable. Further, an awareness question, asking the subjects to list the names of stores carrying the products, was found to be weak. The subjects, in absence of their personal knowledge, listed the stores they *thought* might carry the products. That is, subjects could guess an appropriate answer, thus limiting the usefulness of the question in distinguishing high and low familiarity subjects.

Debriefing helped identify a few other questions for elimination from the questionnaire. Specifically, a purchase question, asking the subjects for whom they had purchased the products (Question 7, Appendix A) was found to be irrelevant. Because of the relatively high price of the products (such as bicycles and compact disc players), student subjects do not typically purchase them for someone else. Further, determination of when the subjects had bought the products (Question 6) and if they owned the products (Question 8) exhibited redundancy of the previous question (i.e., Question 7).

Two questions related to information search were also identified for elimination from next version of the questionnaire. Questions related to whether subjects would look for information about the products (Question 12, Appendix A) and the list of sources they would consult for information about the products (Question 13) were not found to be valuable. The subjects expressed that due to the high prices of the products, they would certainly look for information before purchasing the products. Further, a subsequent question (Question 15) asked the subjects to simply check their sources of information from a list of sources identified within the question. Thus, the need to ask subjects to *list* their sources, as in Question 13 (Appendix A) was minimized.

Finally, the subjects stated that they guessed answers to nearly all the multiple choice questions (numbers 19 - 30, Appendix A) because of fatigue and boredom caused mainly by the long questionnaire. Therefore, it was decided to eliminate Questions 19 - 30 (Appendix A) from the familiarity measure. The feedback from the subjects in the first pretest was incorporated into the next iteration of the familiarity questionnaire, as discussed next.

Second Pretest

The major task of the second pretest was to verify that the questions included in the familiarity measure indeed measured familiarity of the subjects and could assist in distinguishing between high and low familiarity subjects. Verification of absence of ambiguities and scoring the subjects' responses to the questions were expected to enable determination of subjects' level of familiarity.

The questionnaire for the second pretest, shown in Appendix B, contained several modifications from the earlier questionnaire. First, on the basis of the discussion in the preceding section, the number of questions was reduced. Fewer questions were expected to facilitate subjects' responses by reducing fatigue and boredom and to eliminate guessing the answers. Second, based on suggestions from subjects of the first pretest, a few questions were reworded to remove ambiguity.

The questionnaire was then pretested on another group of 22 students from another marketing class. Administration of the second pretest was the same, with the exception that subjects were not specifically asked for comments or suggestions. Completion time was 22 minutes for this pretest. After completing the

questionnaire, subjects were debriefed which identified opportunities for further improvements in the questionnaire.

Further Refinement of Familiarity Measure: During debriefing, a majority of the subjects indicated some fatigue and boredom due to a few open-ended questions for the four products, suggesting elimination of at least one product from further consideration as a remedy. The decision as to which product to eliminate was deferred until the the subjects' responses were analyzed.

Debriefing further helped identify ambiguity in a question related to the usage of products. Specifically, responses to the question about the frequency of usage of products (Question 7, Appendix A) were interpreted inconsistently among the subjects. Six possible response choices were were "never," "rarely," "sometimes," "often," "always," and "does not apply." These choices were interpreted differently by the subjects. For instance, one subject indicated that he used camera once a month and considered the usage as "often" whereas another subject considered it as "sometimes." Such inconsistency in subjects' responses highlighted a need to change the response choices in the question. For the next pretest, it was decided to eliminate the response choices and make this question open-ended while providing examples for answers such as, "Once a week, once in two weeks, once a month etc." Notwithstanding this error related to a question, subjects' responses were scored to determine their familiarity with products, as discussed next.

Determining Subjects' Level of Familiarity: Using the scale (shown in Appendix B), subjects' responses on questionnaires were scored for each product. According to the scoring procedure of the scale, subjects' scores could vary between 0 and 49 points for each product. A score of 0 or near 0 would indicate the lowest level of

familiarity whereas a score of 49 or near 49 would indicate the highest level of familiarity with products.

After scoring the questionnaires, subjects' responses to all questions for each product were summed to determine aggregate scores of subjects' familiarity with different products. The range of scores for each product and subjects' sex are shown in Table 1. As shown in Table 1, the scores ranged from 10 to 42 for running shoes, 10 to 33 for cameras, 5 to 39 for bicycles, 8 to 35 for compact disc players.

Next, it was necessary to develop a procedure to differentiate the subjects according to their level of familiarity. Given that this research sought the maximum number of consumers who had either high or low familiarity with a product, two procedures were considered appropriate, i.e., the *quartile method* and the *thirds-split*.³ Both the procedures permit consideration of observations at both ends of a spectrum. By the quartile method, the upper and lower 25 percent of the observations are considered whereas with the thirds-split, the upper and lower 33 percent of the observations are considered.

The outcomes of both, the quartile method and the thirds-split method were compared to make a decision on the procedure to be used in this study. As shown in Table 1, both methods identified different numbers of subjects into groups of high and low familiarity. With the quartile method, four subjects were classified as having high familiarity and four subjects as having low familiarity with camera. Each group included two males and two females. In contrast, with the third-split method, six subjects were classified as having high familiarity and eight subjects as having

³ Both these methods present a unique advantage over the often-used median-split method which splits the observations into two groups by the median. It is possible that observations close to the median may be classified into different groups even though the difference between the observations may be marginal. By not considering the observations around the median, the quartile and the thirds-split methods remove doubts about incorrect classification of the observations. The disadvantage, of course, of these methods is the classification of fewer subjects into either group than with the median split method.

Table 1
Distinguishing High and Low Familiarity
Subjects by Quartile and Thirds-split Methods
from Second Pretest'

<u>Product</u>	<u>Score Range</u>	<u>Quartile Method</u>				<u>Thirds-split Method</u>			
		<u>Level of Familiarity</u>	<u>No. of Subjects</u>	<u>Sex</u> Male Female		<u>Level of Familiarity</u>	<u>No. of Subjects</u>	<u>Sex</u> Male Female	
Running Shoes	10 to 42	Low	3	3	0	Low	4	4	0
		High	6	2	4	High	7	2	5
		Total	9	5	4	Total	11	6	5
Camera	10 to 33	Low	4	2	2	Low	8	6	2
		High	4	2	2	High	6	3	3
		Total	8	4	4	Total	14	9	5
Bicycles	5 to 39	Low	6	4	2	Low	11	7	4
		High	4	3	1	High	5	3	2
		Total	10	7	3	Total	16	10	6
CD Players	8 to 35	Low	6	5	1	Low	10	6	4
		High	5	5	0	High	6	6	0
		Total	11	10	1	Total	16	12	4

* n = 22

low familiarity with camera. The high familiarity group included six males and two females whereas the low familiarity group included three males and three females. With the objective of clearly separating the maximum number of subjects into the two groups, it was decided to use the thirds-split method in classifying high and low familiarity subjects.

It was discussed earlier that debriefing revealed some fatigue and boredom on the part of the subjects of this pretest. Therefore, for the next pretest, it was necessary to eliminate one of the products from further consideration. Equally important in determination of subjects' level of familiarity and the product to be used in the study was assurance of no gender bias influencing the results. To avoid the influence of gender bias, subjects' classification into high and low familiarity groups was examined with respect to their sex for each product. As shown in Table 1 for compact disc players, at the high end of the scale, there were no females who were highly familiar with it. Predominance of males as highly familiar subjects could influence the results. To avoid any influence of gender bias, compact disc players were eliminated from further measurement of consumers' familiarity. The additional benefit of reducing the number of products in the questionnaire was that it took less time and effort for subjects to fill it out.

Third Pretest

The third pretest had two primary goals. The first goal was to determine which product should be used as the stimulus for the experiment. The second goal was to identify subjects with high as well as low familiarity with the product. To achieve these goals a few conditions had to be met. The first condition had to do with obtaining a sufficiently wide range of scores for the products on the familiarity scale

that would permit differentiating between high and low familiarity subjects. The second condition was related to identifying a product with approximately equal number of high and low familiarity subjects. The final condition was related to approximately equal representation of males and females in the groups of high and low familiarity subjects for a particular product.

To achieve the goals of this pretest while satisfying all the conditions, the third pretest was run with a large pool of subjects. The subjects for this pretest included students from two marketing classes and a management science class. All the students present at meetings of the three classes were enlisted for participation in the study. The former group of students received an extra credit for their participation whereas students in the latter group participated in a lottery of \$5.00 for five prizes. Responses of 295 students to the questionnaire (see Appendix C) were scored according to the procedure (shown in Appendix C) for their familiarity with bicycles, cameras and running shoes.

Scores for cameras, as shown in Table 2, ranged between 6 and 39, and 233 subjects were classified as either high or low familiarity consumers with cameras. With bicycles and running shoes, 192 subjects were classified as high and low familiarity consumers from a range of scores of 5 to 39 and 6 to 43, respectively.

As related to bicycles, it appeared that there might be more low familiarity consumers than high familiarity consumers. Although difference in proportion of high and low familiarity consumers by itself would not jeopardize the experiment, it was believed that the analyses of data would be complicated due to unequal cell sizes. Further, of the 46 high familiarity subjects, nearly twice as many were males, raising suspicion of gender bias. In contrast, for running shoes, there were more than three times as many high familiarity subjects as low familiarity subjects. Such a disproportionate number of subjects in the familiarity groups could render highly

Table 2

**Stimulus Choice Criterion Data
from Third Pretest***

<u>Product</u>	<u>Score Range</u>	<u>Level of Familiarity</u>	<u>No. of Subjects</u>	<u>Sex</u>	
				<u>Male</u>	<u>Female</u>
Running Shoes	6 to 43	Low	43	27	16
		High	149	66	83
		Total	192	93	99
Camera	6 to 39	Low	107	67	40
		High	126	52	74
		Total	233	119	114
Bicycles	5 to 38	Low	146	62	84
		High	46	30	16
		Total	192	92	100

* n = 295

unequal cell size in the experiment, which although not detrimental to data analysis, could make it very difficult. Thus, two of the three conditions stated earlier, related to approximately equal number of high and low familiarity subjects with approximately equal number of males and females in each group, were not met.

Familiarity with cameras, on the other hand, was more evenly distributed. As shown in Table 2, there were 107 low familiarity and 126 high familiarity subjects. In the low familiarity group, there were more males than females, and the opposite was true for high familiarity group. In both groups, gender bias appeared to be absent because proportions of males and females were not dramatically different. Therefore, camera was chosen as the product to be used in stimuli.

Overall, both the goals of this pretest were achieved. The third pretest helped determine the product to be used in this study. Moreover, subjects with high and low familiarity with the product were identified for the second stage of the study. As discussed in the previous chapter, the procedure adopted for this study called for manipulating treatments on subjects whose level of familiarity was known in advance. This pretest satisfied that objective. However, it must be acknowledged that mere knowledge of subjects' level of familiarity did not guarantee their participation in the second stage of the study. Before contacting the subjects again for their additional participation in the study, it was necessary to pretest stimuli and dependent measures, as discussed next.

Pretest of Stimuli and Dependent Measures

The pretest of stimuli and dependent measures had three objectives. The first goal was to determine if the stimuli effectively manipulated the desired treatments

of comparisons between brands and cues in the advertisements. The second goal was to determine if the questionnaire containing dependent measures adequately obtained subjects' responses to the dependent variables. Finally, the third objective was to verify subjects' level of familiarity as determined before.

To achieve the goals discussed above, twelve students who had participated in the final pretest of the familiarity scale were recruited in this pretest. As before, the subjects received extra credit in their course for participation in the pretest. Because of their previous participation, the students' level of familiarity with cameras was known prior to the pretest. Of the twelve students, six had high familiarity, and the other six had low familiarity with camera. Each group of six students was exposed to one of six versions of advertisements. Thus, one high familiarity and one low familiarity subject was exposed to one of noncomparative, implicit comparative and explicit comparative advertisements with attribute or general cues. These advertisements are shown in Appendix F.

At the beginning of the pretest, the subjects were instructed about what was expected of them in the experiment (See Appendix D for instructions). Briefly, the subjects were given two envelopes, one containing an advertisement and the other containing a questionnaire for the dependent variables.⁴ The subjects were asked to read the near print-ready version of an advertisement as they would read any other advertisement they might come across in a magazine. To gather the subjects' immediate reactions to the advertisement and to prevent them from rereading it, they were instructed to put the advertisement back into the envelope and turn to the questionnaire. Further, to avoid distracting other subjects responding to the dependent measures, the subjects were asked to put the questionnaire back in the

⁴ It may be recalled that the development of the questionnaire for the dependent variables (shown in Appendix E) was discussed in Chapter 3.

envelope, when finished, and quietly wait for others to finish. The entire procedure took approximately 20 minutes. When everyone was finished, they were debriefed for their reactions to the stimulus and questionnaire with dependent measures.

When asked, the two subjects exposed to a noncomparative advertisement with general cues indicated that the advertisement did not provide enough information for them to want to purchase the sponsored brand. In stark contrast, the two subjects exposed to explicit comparative advertisement with attribute cues felt that they had enough information to come to a judgment about the sponsored brand. Responses of the remaining eight subjects who were exposed to the other four advertisements varied between the vastly different responses of the four subjects discussed above. Variation in responses of subjects exposed to different advertisements was anticipated given that their level of familiarity and level of information in advertisements varied. Further, when asked, all the subjects unanimously said they thought the advertisement they had seen was similar to the ones they see in magazines. The unanimous opinion about the appearance of advertisements supported the notion that the advertisements were believable, depending upon subjects' familiarity with cameras, and to the extent the advertisements provided information about the sponsored brand. Also, the subjects unanimously felt that instructions and questions in the questionnaire were clearly understandable and there appeared to be no ambiguities.

After the subjects' responses to dependent measures were collected, they were questioned about their familiarity with cameras. The familiarity measures section was the same one used earlier in the familiarity scale pretest. The purpose behind including familiarity questions was to check the reliability of their earlier classification as high or low familiarity subjects. When subjects' responses to familiarity questions were scored, the scores ranged from 7 to 37 points with all

subjects falling in the upper or lower 33 percent of the range. Thus, subjects' classifications as high or low familiarity subjects were determined to be reliable. Overall, results of this pretest indicated adequate manipulation of the advertisement treatment and effective collection of dependent measures. Therefore, it was decided to proceed with data collection as described in the next section.

Data Collection Procedure

After the successful pretest of the stimuli and dependent measures, data collection procedure was initiated. As students were used as subjects in this study, students from various marketing courses and a large management science course were invited to participate in the study.

The procedure for data collection was the same as used earlier in the pretest of stimuli and dependent measures. To briefly recapitulate, the subjects were first instructed about what was expected of them (See Appendix D) and given two envelopes containing an advertisement and a questionnaire in each. Briefly, the subjects were asked to read the near print-ready version of an advertisement as they would read any other advertisement in a magazine. After reading the advertisement, the subjects were asked to put it back into the envelope and turn to the questionnaire. The subjects were also instructed to put the questionnaire back into its envelope after responding to the questions.

The experimental procedure called for random assignment of the subjects to various treatment conditions. With three levels of comparisons in advertisements and two levels of cues, there were six different treatment conditions in the

experiment. All the subjects were randomly assigned to one of the six treatment conditions in the experiment. During the three day period in which the data were collected, two hundred sixty six subjects participated in the experiment. Of the two hundred and sixty six questionnaires, one was discarded because of missing data. The remaining questionnaires were completely answered and contained no missing data. As the first step in analyses, subjects' background and relevant demographics were looked at, as discussed in the next section.

Sample Characteristics

Before proceeding with any analyses of data, it was thought prudent to check for any aberrations in the characteristics of the sample. As stated earlier, the sample comprised of two hundred and sixty five male and female College of Business students. Therefore, their demographic characteristics were expected to reflect relatively young age, business majors and upper-level class standing.

A demographic profile was developed from the subjects' responses to questions related to their sex, age group, class standing and their major curriculum (See Appendix G). Briefly, the sample consisted of 120 males (45.3 percent) and 145 females (54.7 percent). As expected, most of the subjects (88.3 percent) were in 20 - 22 years age group. Moreover, nearly all the subjects were upper class students as expected, with juniors and seniors comprising 99.4 percent of the sample. Finally, nearly half of the subjects in the sample were marketing students. Thus, there appeared to be no aberrations in the sample characteristics, providing assurance to proceed with further data analyses.

Further analyses of data was contingent upon the absence of dominance of either gender in the high and low familiarity groups of subjects. However, before assessing the gender influence, it was necessary to determine their level of familiarity with cameras, as discussed next.

Assessment of Subjects' Familiarity

As the first step in analysis of data, subjects' level of familiarity was determined. To determine the subjects' level of familiarity without any influence due to knowledge about the experiment, two students were hired to score the subjects' responses to familiarity questions. These students, serving as independent judges, had not participated in the research and were not aware of the hypotheses.

Prior to scoring the questionnaires, the judges received explanations about the familiarity questions and the procedure for scoring subjects' responses (as shown in Appendix C). Following the scoring procedure discussed earlier, both the judges scored all the questionnaires independently and assessed the subjects' responses to all the familiarity questions. After each judge had scored all the questionnaires, their scores were compared. Of the two hundred and sixty five questionnaires scored, the judges' scores matched on two hundred and thirty three questionnaires. That is, the inter-judge reliability was 88 percent on the first pass of assessing subjects' familiarity. On the remaining thirty-two questionnaires, the judges' disagreements were related to the questions that asked the subjects to list their prior experiences with the cameras in open-ended format (Question 15, Section 2,

Appendix E). In each case, the judges discussed their interpretations of subjects' experiences and resolved their differences through discussion. Thus, all the two hundred and sixty five questionnaires were fully scored with a range of scores 10 to 35. Using the thirds-split method, discussed earlier, 94 cases were classified as high familiarity and 85 cases were classified as low familiarity cases. Overall, 179 cases were identified as high or low familiarity cases.

Assessment of Gender Dominance in High and Low

Familiarity Subjects

To check for dominance of either gender in high or low familiarity subjects, their sex was cross tabulated with their level of familiarity. As shown in Table 3, equal numbers of males were divided into high and low familiarity levels. The number of females with low familiarity was little higher than that with high familiarity. Thus, there appeared to be predominance of neither gender in high or low familiarity subjects. To proceed with further analyses, cell sizes of the experimental design were determined, as discussed next.

Table 3.
Subjects' Level of Familiarity and Gender

<u>Subjects' Level of Familiarity</u>	<u>Subjects' Sex</u>		<u>Total</u>
	<u>Males</u>	<u>Females</u>	
High	45	49	94
Low	45	40	85
Total	90	89	179

Cell Sizes

Having identified high and low familiarity subjects, the next step was to determine how many subjects received one of the various advertisement treatments. As discussed earlier, the other variables in this research were type of comparisons in advertisements (three levels) and type of cues in advertisements (two levels).

So as not to violate any statistical assumption regarding equal sample size in different treatment conditions, it was necessary to determine cell sizes of the experimental design. With three levels of comparisons in advertisements, two levels of cues in the advertisements and two levels of familiarity, there were twelve cells in the experimental design. As mentioned in the previous chapter, this research sought approximately fifteen subjects in each cell. However, as shown in Table 4, cell sizes for the two levels of familiarity with each of the six versions of advertisements varied from 12 to 17. As evidenced in Table 4, the cell sizes were nearly equal, permitting analyses of data without any serious violation of equal cell sizes assumption. Before proceeding with hypothesis tests, it was necessary to assess the dependent measures instrument, as discussed next.

Assessment of Dependent Measures Instrument

This section discusses the steps taken to ensure that the questions measuring dependent variables were sufficiently reliable for the statistical analyses to follow.

Table 4
Cell Sizes

Level of Familiarity: High

<u>Cues</u>	<u>Type of Comparisons</u>			<u>Total</u>
	<u>Noncomparative</u>	<u>Implicit Comparative</u>	<u>Explicit Comparative</u>	
Attribute	n = 15	n = 15	n = 17	47
General	n = 16	n = 15	n = 16	47
Total	31	30	33	94

Level of Familiarity: Low

<u>Cues</u>	<u>Type of Comparisons</u>			<u>Total</u>
	<u>Noncomparative</u>	<u>Implicit Comparative</u>	<u>Explicit Comparative</u>	
Attribute	n = 16	n = 15	n = 16	47
General	n = 14	n = 12	n = 12	38
Total	30	27	28	85

High reliabilities of the measures were ensured in two ways. Initially, the items were examined by factor analysis to verify that all the items were reliable. (Table 5 shows various items used to measure subjects' responses to each dependent variable). The items that were not reliable were deleted. Subsequently, as an additional measure of reliability, internal consistency of the remaining items was determined. According to Churchill (1979), internally consistent measures are a prerequisite to achieving construct validity. Before assessing internal consistency of the measures, it was necessary to examine the structure of the dependent variables, as discussed next.

Factor Analysis of Dependent Measure Items

Assessment of the reliabilities of various items measuring dependent variables is contingent upon unidimensionality of the dependent variables (Churchill 1979; Peter 1979). To verify that the dependent variables were unidimensional, it was necessary to examine the underlying structure of those variables. Factor analysis addresses the problem of analyzing the interrelationships among different variables and explains these variables in terms of their common underlying structure (Hair, Anderson and Tatham 1987).

Next, it was necessary to determine the appropriate type of factor analysis to be used in this research. Generally, exploratory factor analysis is used when the underlying dimensions of a data set are unknown (Stewart 1981). As the data for this research were collected for specific dependent variables by specific question items, the underlying dimensions were known. The purpose of a factor analysis at this stage of the research was to verify the structure of the items measuring

Table 5
Question Items for
Dependent Variables

<u>Dependent Variables</u>	<u>Items</u>
Informativeness	Precise Amount of Information Obtained Informative Amount of Information Remembered
Brand Evaluation	Attractive Favorable Good Positive Useful Advantageous Beneficial
Confidence	Confident (Seven Measures, one for each of the brand evaluation measures)
Purchase Intention	Likelihood Willingness Consider Buying

different dependent variables. For such purposes, according to Stewart (1981), a confirmatory factor analysis may be warranted.

A confirmatory factor analysis was, therefore, undertaken for the data with LISREL (Joreskog and Sorbom 1984). Confirmatory factor analysis permits an examination of the underlying structure of the items and identifies the items that, if deleted, can improve the overall structure the model. Several statistics serve as guides in determining the appropriateness of a factor structure model (Bagozzi and Yi 1988). These statistics include χ^2 , fit index, Adjusted Goodness of Fit Index (AGFI) and Root Mean Square Residual (RMR).⁵

Deriving A Factor Structure of Dependent Variables

To obtain a satisfactory factor structure of the dependent variables, several factor models of the question items were derived (see Table 6). A detailed explanation of the differences between the models is included in Appendix H. Briefly, as a first step in factor analysis to determine the structure, all the twenty one items were included in the analysis as factors. According to Bagozzi and Yi (1988), such a factor model, identified as a null model (M_0 , Table 6), serves as a baseline model to which to compare other factor structure models. As all items were considered as individual factors, this model was expected to result in a poor

⁵ Bagozzi and Yi (1988) provide guidelines for values of these indicators to assess adequacy of factor models. The authors note that χ^2 is a likelihood ratio statistic for testing a hypothesized model against the alternative that the covariance matrix is unconstrained. When comparing two factor models, a large change in χ^2 , compared to the difference in degrees of freedom, constitutes a real improvement. The fit index indicates how good a factor model is in comparison to the null model and the values of .90 and above are indicative of adequate fits. The AGFI indicates the relative amount of variances and covariances jointly accounted for by the hypothesized model, and values of .90 or higher are considered to indicate good fits. The authors also note that values of the AGFI are generally a little lower than those of the fit index, and values of .90 for the AGFI err on the side of conservatism. Finally, the RMR indicates the average of the residual variances and covariances and should be much lower than that for the null model (Ibid.).

fit to the structure of the items. Table 6 shows the values of the statistics, i.e., χ^2 (2912.23), AGFI (.151) and RMR (.707). This solution was unacceptable due to two reasons. First, theoretically, with four dependent variables, roughly as many factors were expected. That is, all the items could not be expected as factors. Indeed, with this reason, the aforementioned statistics were expected to exhibit a poor fit of the model, following the guidelines provided by Bagozzi and Yi (1988).

Next, a four-factor model of the question items was sought. Given four dependent variables in the research, a four-factor solution of the items was expected to separate the items according to the variables. Table 6 shows the relevant statistics for this model (M_1), i.e., χ^2 (578.88), AGFI (.668), RMR (.159), and fit index (.801). Although this model is better than the null model, the values of all the statistics indicate unacceptability of this model.

The results of the four-factor model (i.e., considering the four dependent variables as four factors) also identified several items for elimination that contributed to the poor fit of the model (see Appendix H for explanation about how the items were deleted). These items included one informativeness of advertisement item (i.e., "tell someone about the camera from the information remembered from the advertisement"), four brand evaluation items (i.e., attractive, favorable, good, and positive evaluation of the brand), and two confidence measures (related to attractive and favorable brand evaluations). After these items were deleted from the factor structure, a satisfactory model (M_8 , Table 6) was obtained. The results of this model showed relatively satisfactory values of all the statistics as shown in Table 6 (i.e., AGFI = .897, RMR = .068 and, fit index = .967).

It may be noted that this four-factor model resulted in eliminating seven of the twenty-one items of the four dependent variables. In particular, of the seven brand evaluation items, four had to be eliminated. These four items, as discussed above,

were how attractive the brand is, how favorable the impression of the brand is, how good the brand is, and how positive the evaluation is. That is, these items seemed to measure affective evaluation rather than evaluation. On the other hand, the items of evaluation remaining in the model (i.e., useful, advantageous, and beneficial) seem to refer to usefulness of the brand. Thus, two types of evaluative judgments are being captured by the seven measures of brand evaluation: affect and usefulness.

With the understanding that there may be five factors in the structure of the items, a five-factor model was sought in the confirmatory factor analysis. Table 6 shows the relevant statistics for this model (M_9), i.e., χ^2 (403.03), AGFI (.760), RMR (.115), and fit index (.862). Although this model is better than the null model, the relative values of all the statistics indicate its unacceptability.

The results of the five-factor model (i.e., considering the five dependent variables as five factors) also identified several items for elimination that contributed to the poor fit of the model (see Appendix H for explanation about how the items were deleted). These items included one informativeness of advertisement item (i.e., "tell someone about the camera from the information remembered from the advertisement"), one brand evaluation item (i.e., attractiveness of the brand), and two confidence measures (related to attractive and favorable brand evaluations). After these items were deleted from the factor structure, a satisfactory model (M_{13} , Table 6) was obtained. The results of this model showed relatively satisfactory values of all the statistics as shown in Table 6 (i.e., AGFI = .852, RMR = .072 and, fit index = .938).

The factor scores of the remaining items separated the items by the dependent variables those items measured. Indeed, the brand evaluation variable was factored into two measures. Three brand evaluation items (i.e., favorable, good, and

positive evaluation of the brand) manifest a factor distinct from the other three brand evaluation items (i.e., useful, advantageous and beneficial). Thus, the brand evaluation structure contained two factors. The former factor was labeled as affective brand evaluation whereas the latter was labeled as usefulness of brand evaluation. The items remaining in the informativeness factor were: preciseness of advertisement, amount of information obtained from the advertisement and perceived informativeness of the advertisement. Moreover, of the seven confidence measures, five remained in the model. Finally, the model contained all three measures of purchase intention: willingness to purchase, likelihood of purchasing and consider purchasing the brand.

As the preceding discussion shows, the confirmatory factor analysis assisted in determining the underlying structure of the dependent variables. It was shown that with two different types of evaluative judgments, there were five dependent variables instead of four. More importantly, the factor analysis confirmed the unidimensionality of these variables, thus permitting the assessment of reliability of the measures, as discussed next.

Assessment of Reliability of Measures

Before using the data collected in the instrument for hypothesis tests, the individual items that underlie the dependent variables need to be examined for their reliability. Presented in this section is an assessment of the reliability of items that measured the dependent variables. Reliability "is the degree to which observations are consistent or stable" (Rosenthal and Rosnow 1984, p. 76).

The global measures of fit of a factor model (discussed in the previous section) address the overall adequacy of a model but do not explicitly provide information about the reliability of the items (Bagozzi and Yi 1988). To enhance confidence in using the five factor model of the dependent variables, reliabilities of the items of each dependent variable were determined.⁶ Table 7 presents the composite reliabilities of various items measuring the five dependent variables. As shown in Table 7, all the values of reliability are higher than .60, as recommended by Bagozzi and Yi (1988).

Reliabilities of the items measuring the dependent variables were also assessed by an additional measure. While several procedures exist to examine reliability (e.g., test-retest, equivalent-forms, and split-half methods), Churchill (1979) recommends determining internal consistency of the items as a measure of reliability. The basic statistic for assessing internal consistency is coefficient alpha. Essentially, coefficient alpha indicates how well the sample of items captures each construct. For early stages of basic research, Nunnally (1967, 1978) suggests that alpha coefficients of .60 to .70 are adequate. Table 8 presents coefficient alphas for the dependent variables measured by all the items. As shown in Table 8, all the values of coefficient alphas are greater than .70, as recommended by Nunnally (1967, 1978). Thus, the items measuring the dependent variables were judged internally consistent.

Overall, the reliability of measures was found to be satisfactory. The next task was to develop composite scores of the dependent variables, as discussed next.

⁶ Bagozzi and Yi (1988) identify the reliability of different items measuring a dependent variable as the composite reliability and suggest that a value of .60 or greater is desirable for composite reliability.

Table 6

Results of Confirmatory Factor Analyses of Dependent Measures

<u>Model</u>	<u>Chi-Sq</u>	<u>D.F.</u>	<u>p-value</u>	<u>AGFI</u>	<u>RMR</u>	<u>Model Comparison</u>	<u>Fit Index</u>
M_0	2912.23	210	.00	.151	.707		—
M_1 : Full (4 factors)	578.88	183	.00	.668	.159	$M_1 - M_0$	.801
M_2	451.95	184	.00	.735	.144	$M_2 - M_0$	.845
M_3	325.14	146	.00	.784	.126	$M_3 - M_0$	.888
M_4	289.04	129	.00	.794	.122	$M_4 - M_2$	.901
M_5	245.95	113	.00	.805	.102	$M_5 - M_0$	.916
M_6	212.83	98	.00	.811	.091	$M_6 - M_0$	.927
M_7	136.43	84	.00	.866	.079	$M_7 - M_2$	.953
M_8	95.19	71	.00	.897	.068	$M_8 - M_0$	.967
M_9 : Full (5 factors)	403.03	179	.00	.760	.115	$M_9 - M_0$	.862
M_{10}	352.45	160	.00	.775	.107	$M_{10} - M_2$	.879
M_{11}	308.78	142	.00	.783	.089	$M_{11} - M_0$	.894
M_{12}	254.36	125	.00	.819	.077	$M_{12} - M_0$	.913
M_{13}	181.18	109	.00	.852	.072	$M_{13} - M_2$	.938

Table 7**Reliability of Measures for the Final
Five Factor Model of Dependent Measures**

<u>Dependent Variable</u>	<u>Items</u>	<u>Composite Reliability</u>
Informativeness	Precise, Amount of Information, Informative	.939
Affective Brand Evaluation	Favorable, Good, Positive	.845
Usefulness of Brand Evaluation	Useful, Advantageous, Beneficial	.921
Confidence in Evaluation	Confidence (five measures)	.875
Purchase Intention	Likelihood, Willingness, Consider Buying	.888

Table 8
Coefficient Alphas of Items
Measuring Dependent Variables

<u>Dependent Variable</u>	<u>Measures</u>	<u>Value</u>
Informativeness of Ad	Precise Amount of Information Informative	.94
Affective Brand Evaluation	Favorable Good Positive	.83
Usefulness of Brand Evaluation	Useful Advantageous Beneficial	.92
Confidence in Evaluation	Confidence (five Measures)	.87
Purchase Intention	Likelihood Willingness Consider Buying	.89

Developing Composite Scores for Dependent Variables

Prior to testing the hypotheses, an examination of the values of dependent variables was undertaken. As this research included measuring the dependent variables by multiple questions, it was necessary to combine the values of various questions of the same dependent variable into a single value. Included in this section are discussions of the development of composite scores of dependent variables and of the range of the composite scores.

The next step before using the data for hypothesis tests was to combine the appropriate question items into composite scores for each dependent variable. Composite scores were formed by averaging individual response items for each dependent variable. Moreover, extremity of affective brand evaluation and usefulness of brand evaluation were computed as deviations of the score from the midpoint of the range of score.⁷

After developing the composite scores for the dependent variables, the range of the composite scores of the dependent variables was obtained. The ranges of values identified the means and standard deviations of each dependent variables. Table 9 presents the scale means and standard deviation of each dependent variable for all levels of independent variables. The first half of Table 9 shows the means and standard deviation of high familiarity subjects whereas the second half is for low familiarity subjects.

As shown in Table 9, there are several mean values of the dependent variables that could be compared to determine the effects of the independent variables.

⁷ It may be recalled that the affective and usefulness of brand evaluations were obtained on scales of 1 to 7. Extremity of brand evaluation was operationally defined as deviation of the score from midpoint of the scale and could vary from 0 to 3.

Table 9

Scale Means and Standard Deviations of Each Dependent Variable for All Levels of Independent Variables

Dependent Variable	Familiarity: High	Type of Advertisement											
		Noncomparative				Implicit Comparative				Explicit Comparative			
		Attribute Cues		General Cues		Attribute Cues		General Cues		Attribute Cues		General Cues	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Informativeness	4.04	1.24	2.54	1.01	4.20	1.00	2.84	1.21	5.14	.64	2.85	1.14	
Extreme Affective Brand Evaluation	1.04	.69	.63	.63	.56	.53	.69	.53	1.08	.57	.88	.44	
Extreme Usefulness of Brand Evaluation	1.20	.83	.90	.76	1.24	.78	1.02	.74	1.16	.82	1.02	.70	
Confidence	5.28	1.23	4.59	1.45	5.20	.90	4.91	.96	5.22	.80	4.73	1.25	
Purchase Intention	4.02	1.40	2.90	1.09	4.73	.67	3.87	1.15	4.51	.93	3.85	1.61	
	Familiarity: Low	Type of Advertisement											
		Noncomparative				Implicit Comparative				Explicit Comparative			
		Attribute Cues		General Cues		Attribute Cues		General Cues		Attribute Cues		General Cues	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Informativeness	4.33	1.02	2.81	1.25	4.87	.72	2.86	.74	5.23	.87	2.75	.82	
Extreme Affective Brand Evaluation	.96	.74	.69	.63	.67	.52	.81	.72	.94	.52	.69	.59	
Extreme Usefulness of Brand Evaluation	.96	.42	.98	.94	1.20	.68	.92	.61	1.35	.79	1.31	.44	
Confidence	4.58	1.09	4.37	1.32	5.09	.99	4.35	1.11	5.30	.87	4.38	.94	
Purchase Intention	3.88	1.15	3.52	1.49	4.38	.82	2.72	1.13	4.38	1.29	3.28	1.43	

Although these means could be compared by t tests, a disadvantage of running multiple t tests to compare means is that the probability of falsely rejecting at least one of the hypotheses increases as the number of t tests increases (Ott 1984, p. 328). For such analyses, F tests as conducted by the analysis of variance are more appropriate, because the probability of Type I error can be controlled (Ott 1984, p. 329). The next issue to settle was whether to use univariate or multivariate analysis of variance, as discussed next.

Inter-correlations Among Dependent Variables

Decision as to whether to use univariate or multivariate analysis of variance was made on the basis of the inter-correlations among the dependent variables. High correlations among the dependent variables would recommend a multivariate analysis of variance (Wind and Denny 1974). Table 10 shows the inter-correlations among the dependent variables. It may be noted that while the correlations are statistically significant ($P < .01$), they are not high enough to warrant multivariate analysis of variance.⁸ Therefore, it was decided that the dependent variables were independent of each other and, to test the hypotheses by univariate analysis of variance, as discussed next.

⁸ As Table 10 shows, all the values of the inter-correlations are lower than .51 which were not considered "high" enough to warrant multivariate analysis.

Table 10

Inter-correlations Among Dependent Variables*

	<u>Dependent Variables</u>				
	<u>Informaliveness of Advertisement</u>	<u>Extreme Affective Brand Evaluation</u>	<u>Extreme Usefulness of Brand Evaluation</u>	<u>Confidence in Brand Evaluation</u>	<u>Purchase Intention</u>
<u>Informaliveness of Advertisement</u>	1 000				
<u>Extreme Affective Brand Evaluation</u>	205	1 000			
<u>Extreme Usefulness of Brand Evaluation</u>	314	329	1 000		
<u>Confidence in Brand Evaluation</u>	344	228	428	1 000	
<u>Purchase Intention</u>	506	199	310	365	1 000

* All correlations are significant at a probability level of .004 or less

Hypotheses Tests

Each hypothesis was tested by univariate analysis of variance. This section presents the results of the hypotheses tests. When the main effects of any of the independent variables were found statistically significant, the mean values of the dependent variable at different levels of independent variables were compared. Several procedures for multiple comparison of means were considered including Fisher's least significant difference, Scheffe's, Tukey's, Student-Newman-Keuls, and Duncan's multiple range test. As Scheffe's and Tukey's procedures are very conservative in detecting the difference between means (Ott 1984, p. 386; Keppel 1985, p. 167), it was decided not to use them in this research. A characteristic of Fisher's least significant difference is that it is appropriate for orthogonal comparisons (Ott 1984, p. 366). As the comparisons in this research were nonorthogonal, it was decided not to use Fisher's procedure to compare the means. Finally, the Student-Newman-Keuls procedure requires a larger difference between the means for statistical significance than Duncan's (Winer 1971, p. 197). That is, with its conservative nature, the Student-Newman-Keuls test could fail to detect small differences in the effects. Because the objective of this research was to examine different effects of various independent variables, it was necessary to detect the smallest difference in the effects, if it was present. Thus, the Student-Newman-Keuls test was not considered desirable. Consequently, it was decided to use Duncan's multiple range test to compare means in this research.

Hypothesis 1

The first hypothesis tested whether or not the noncomparative, implicit comparative and explicit comparative advertisements would equally influence high familiarity consumers regardless of specificity of cues on all the five dependent variables. That is, the results were expected to show no difference between the effects of different comparisons in advertisements.

The ANOVA results for each dependent variable with their related p-values are presented in Table 11. As shown in the table, interaction between type of comparison and type of cues in advertisements was not significant, thus permitting examination of the main effect of type of comparison in advertisements. Table 11 shows that type of comparisons in advertisements significantly influenced high familiarity subjects' perceptions of informativeness of advertisements ($p=.016$). Duncan's multiple range test for comparison of means for the three advertisements, exhibited in Table 12, shows that the informativeness with explicit comparisons was significantly higher than with no comparisons in advertisements ($\alpha=.05$).

Two other dependent variables were significantly influenced by comparisons in advertisements, as shown in Table 11. The extremity of affective brand evaluation was found to vary due to the type of comparisons in advertisements ($p=.049$). As shown in Table 12, the results of Duncan's test show that the high familiarity subjects' affective brand evaluations were more extreme with explicit comparisons in advertisements than with no comparisons in advertisements ($\alpha=.05$). Further, high familiarity subjects' purchase intention was found to be significantly influenced by the type of comparisons in advertisements ($p=.01$). As shown in Table 12, Duncan's test showed that purchase intention was significantly

Table 11

Test of Hypothesis 1

Effects of Comparisons in Advertisements on High Familiarity Consumers

Independent Variables	Degrees of Freedom	Dependent Variables									
		Informativeness of Advertisement	Extreme Affective Brand Evaluation	Extreme Usefulness of Brand Evaluation	Confidence in Brand Evaluation	Purchase Intention	F value	p-value	F value	p-value	
Comparison	(2.88)	4.32	.016	3.11	.049	.11	.899	.10	.901	4.85	.010
Interaction											
Comparison x Cues	(2.88)	1.20	.305	1.78	.174	.09	.916	.23	.794	.08	.920

higher with explicit and implicit comparisons than with no comparisons in advertisements ($\alpha = .05$).

Finally, the results also showed that the noncomparative, implicit comparative and explicit comparative advertisements equally influenced high familiarity consumers (regardless of specificity of cues) for the extremity in usefulness of brand evaluation, and confidence in brand evaluation.

To facilitate the comparison between the prediction and the findings, the results for each dependent variable are plotted in Figure 4.⁹ As shown in Figure 4, the informativeness of the explicit comparative advertisement was found to be greater than that of the noncomparative advertisement. As well, the subjects' affective evaluation is more extreme with explicit comparative advertisement than with noncomparative advertisement. Further, the purchase intention of the subjects is higher with implicit and explicit comparative advertisement than with noncomparative advertisement. Finally, the subjects' confidence in evaluation is equal and their usefulness of brand evaluation is equally extreme with the noncomparative, implicit and explicit advertisements.

Thus, Hypothesis 1 was partially supported. The results showed support for the hypothesis related to extreme usefulness of brand evaluation and confidence in evaluation. However, the hypothesis was not supported for informativeness of the advertisement, extreme affective brand evaluation and purchase intention.

⁹ It may be noted that the results are plotted for both attribute and general cues in the advertisements. However, the means for each dependent variables reported in Table 12 (for the Duncan's Multiple Range test) are averaged over both types of cues.

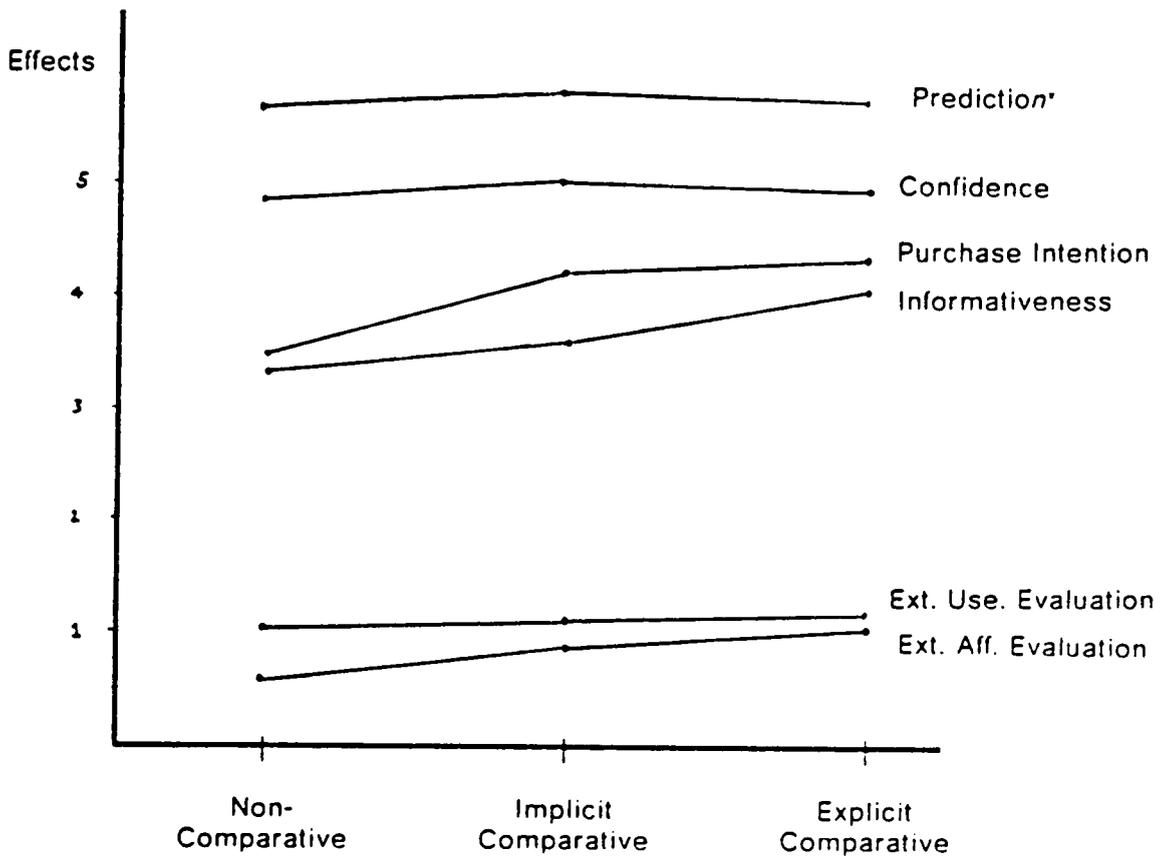
Table 12

Test of Hypothesis 1

Duncan's Multiple Range Test for
Comparison of Means for Significant
ANOVA F Values*

<u>Dependent Variable</u>	<u>Type of Comparison in Advertisement</u>		
	<u>No Comparison</u>	<u>Implicit Comparison</u>	<u>Explicit Comparison</u>
Informativeness of Advertisement	3.270	3.520	4.030
Extreme Affective Brand Evaluation	.622	.828	.980
Purchase Intention	3.441	4.192	4.300

* Means with the same underline are not significantly different at $\alpha = .05$



* position of the predicted relationship on vertical axis is independent of the scale

Figure 4
Hypothesis 1
(High Familiarity Subjects)

Hypothesis 2

The second hypothesis tested whether or not the increasing degree of comparison in advertisements were more effective on low familiarity consumers for both attribute cues and general cues on all the five dependent variables. It was discussed in Chapter 2 that the increasing degree of comparisons in advertisements should be increasingly more effective on low familiarity subjects for both types of cues in advertisements. Thus, unlike Hypothesis 1, the results were expected to show greater effects of comparisons in advertisements, as the comparisons became more explicit.

The results of second hypothesis tests for each dependent variable with related p-values are shown in Table 13. As shown in the table, the type of comparisons in advertisements significantly influenced low familiarity subjects' perceptions of informativeness of advertisements ($p = .081$). Table 14 shows that Duncan's test for comparison of means identified significantly higher informativeness of advertisements with explicit comparisons than with no comparisons in advertisements ($\alpha = .05$). The other variables, i.e., extremity in affective and usefulness of brand evaluation, confidence in evaluation and purchase intention, were not significantly influenced by different comparisons in advertisements.

Figure 5 exhibits the findings related to this hypothesis. The results for each dependent variable are shown for both attribute and general cues. As shown in Figure 5, the informativeness of the explicit comparative advertisement is higher than that of the noncomparative advertisement, especially in the case of attribute

Table 13

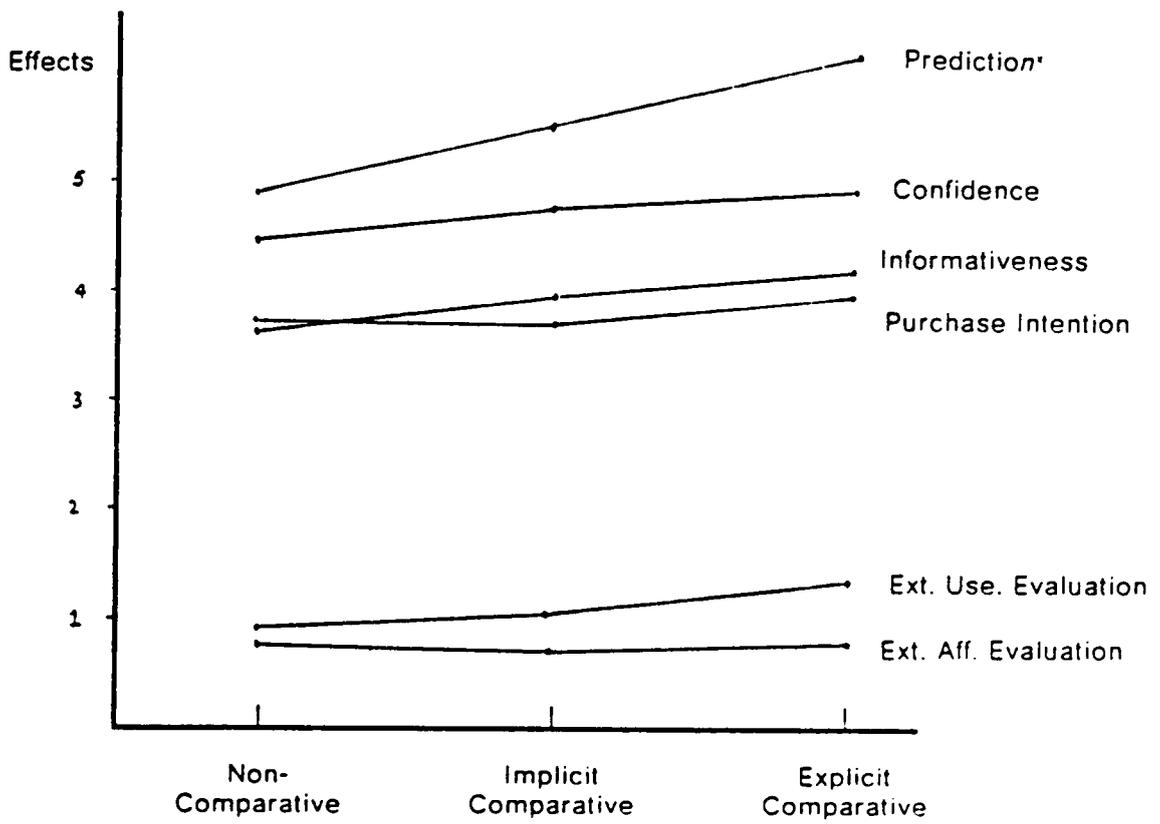
Test of Hypothesis 2
 Effects of Comparisons in Advertisements on
 Low Familiarity Consumers

Independent Variables	Degrees of Freedom	Dependent Variables									
		Informativeness of Advertisement	Extreme Affective Brand Evaluation	Extreme Usefulness of Brand Evaluation	Confidence in Brand Evaluation	Purchase Intention					
		F value	p-value	F value	p-value	F value	p-value	F value	p-value		
Comparison	(2,79)	2.59	.081	.26	.771	2.23	.114	1.18	.313	.34	.713
Interaction											
Comparison x Cues	(2,79)	1.24	.295	.92	.404	.33	.717	.73	.487	1.94	.150

Table 14
Test of Hypothesis 2
Duncan's Multiple Range Test for
Comparison of Means for Significant
ANOVA F Values*

<u>Dependent Variable</u>	<u>Type of Comparison in Advertisement</u>		
	<u>No Comparison</u>	<u>Implicit Comparison</u>	<u>Explicit Comparison</u>
Informativeness of Advertisement	3.622	3.975	4.167

* Means with the same underline are not significantly different at $\alpha = .05$



* position of the predicted relationship on vertical axis is independent of the scale

Figure 5
Hypothesis 2
(Low Familiarity Subjects)

cues. However, as shown in Figure 5, the other dependent variables were not influenced differently by the three type of comparisons in advertisements.

Thus, Hypothesis 2 was partially supported. It was found that the low familiarity consumers perceived the informativeness of explicit comparative advertisements significantly higher than the noncomparative advertisement, regardless of specificity of cues. That is, the increasing degree of comparisons in advertisement was more effective on low familiarity consumers, as related to the informativeness of the advertisements.

Hypothesis 3

The third hypothesis posited that as comparisons in advertisements became more explicit, responses of high and low familiarity subjects would be similar for both attribute and general cues in the advertisements. That is, this hypothesis tested the interaction effects of subjects' familiarity and type of comparisons in advertisements. The results of this hypothesis test for all dependent variables is shown in Table 15. As shown in the table, high and low familiarity subjects' responses to any of the dependent variables did not become similar by increasing the degree of comparisons in advertisements.

As the third hypothesis involved an interaction, plotting the findings for each dependent variable as well as the prediction on one graph would inhibit its easy interpretation. For this reason, it was decided to plot the findings related to each dependent variable (for attribute and general cues) on separate graphs. Thus, results of the third hypothesis for the five dependent variables are shown in Figures

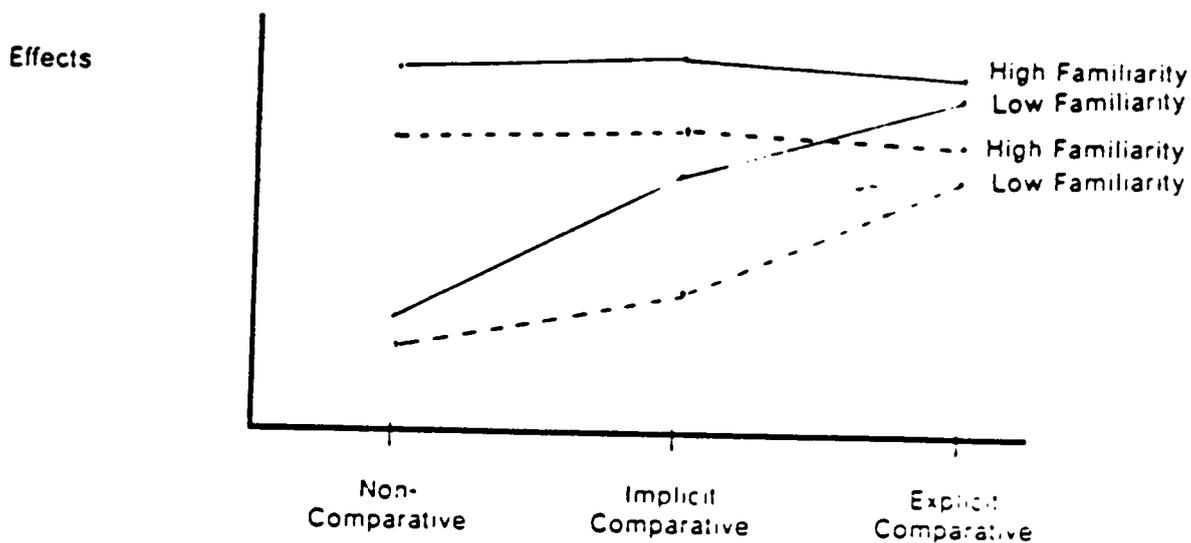
Table 15

Test of Hypothesis 3

Effects of Interaction Between Comparison In Advertisements and Consumers' Familiarity

Independent Variables	Degrees of Freedom	Dependent Variables									
		Informativeness of Advertisement	Extreme Affective Brand Evaluation	Extreme Usefulness of Brand Evaluation	Confidence in Brand Evaluation	Purchase Intention					
		F value	p-value	F value	p-value	F value	p-value	F value	p-value	F value	p-value
Comparison x Familiarity	(2, 169)	.59	.556	.67	.514	.93	.395	.37	.695	2.14	.120
Comparison x Familiarity x cues	(2, 169)	.51	.602	.20	.818	.31	.735	.82	.442	1.87	.158

Relationships Predicted



Relationships Found

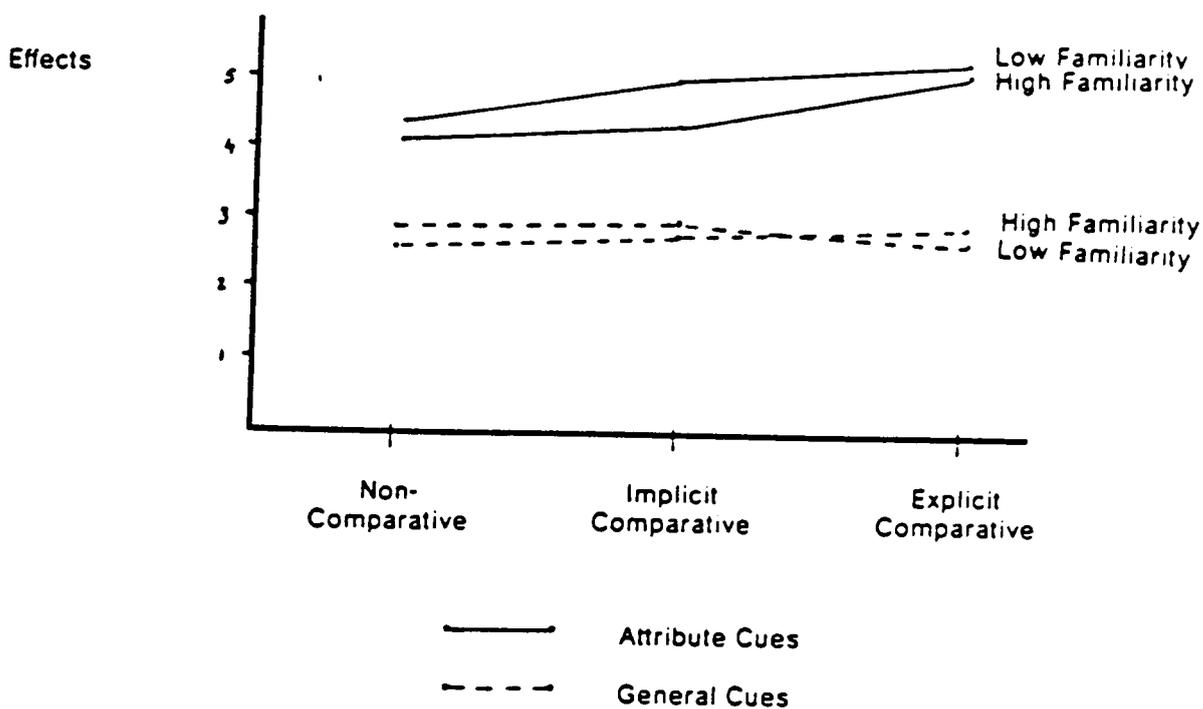
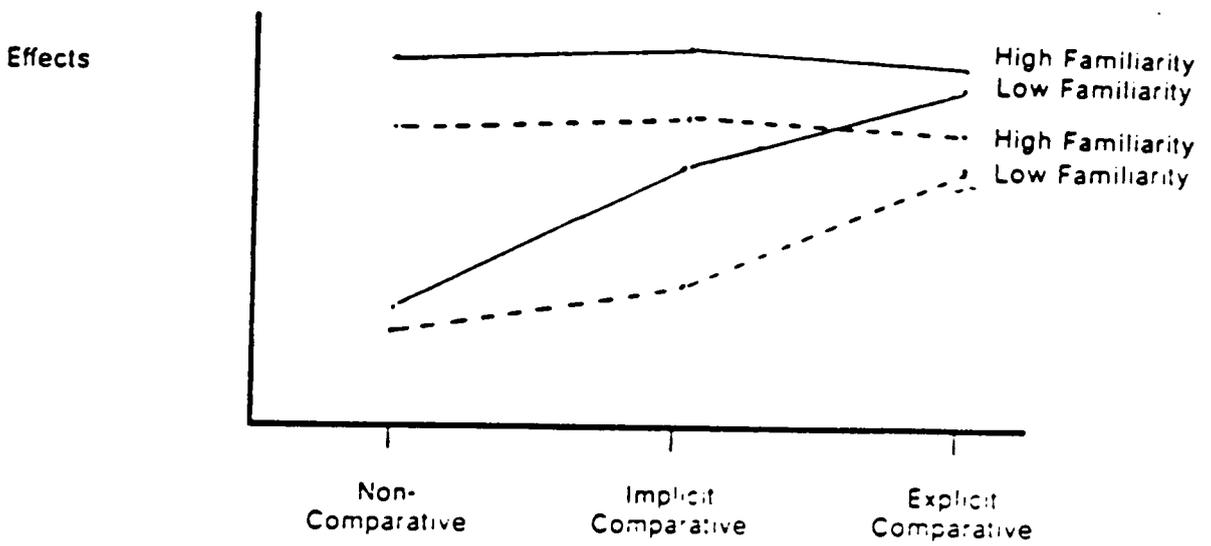


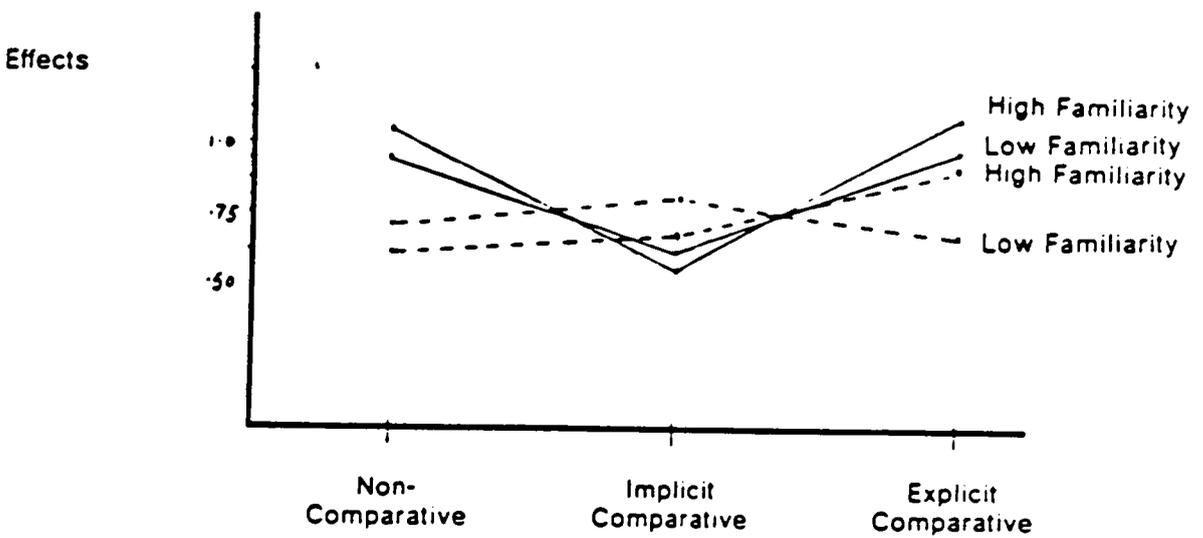
Figure 6

Informativeness of Advertisement

Relationships Predicted



Relationships Found

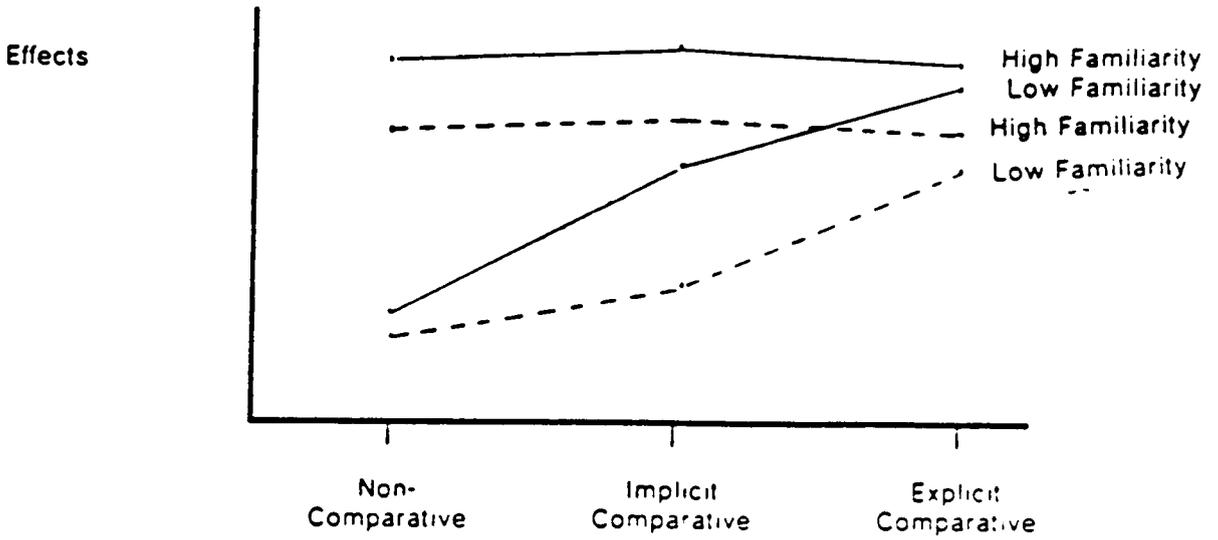


— Attribute Cues
 - - - General Cues

Figure 7

Extreme Affective Brand Evaluation

Relationships Predicted



Relationships Found

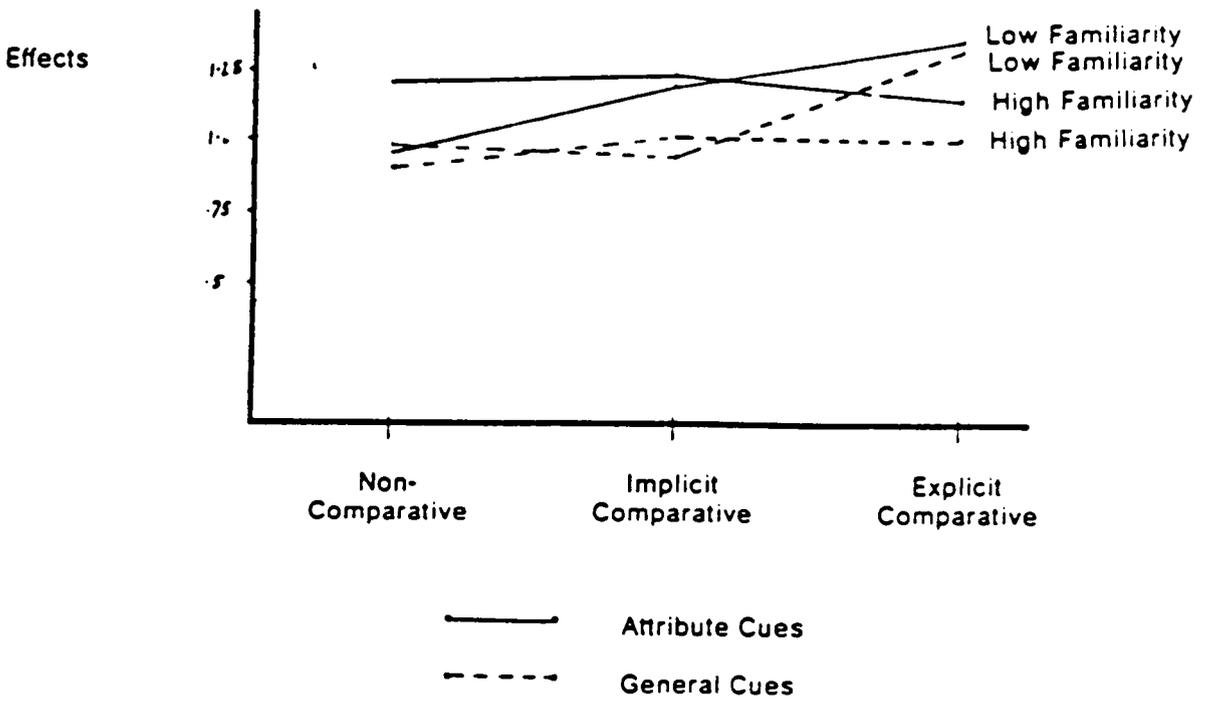
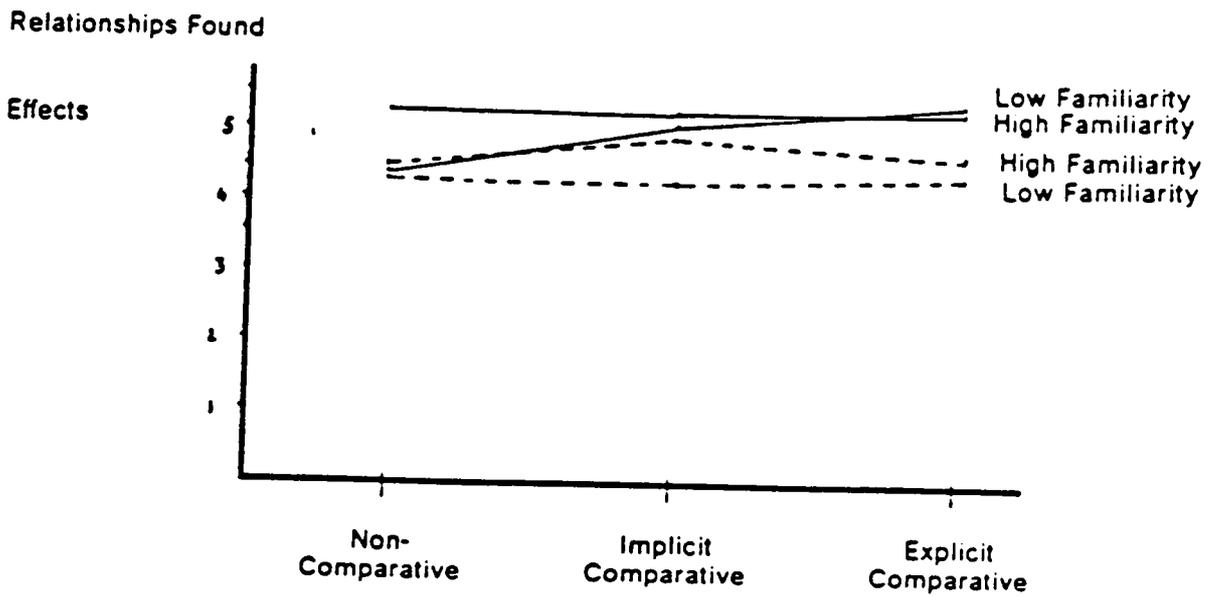
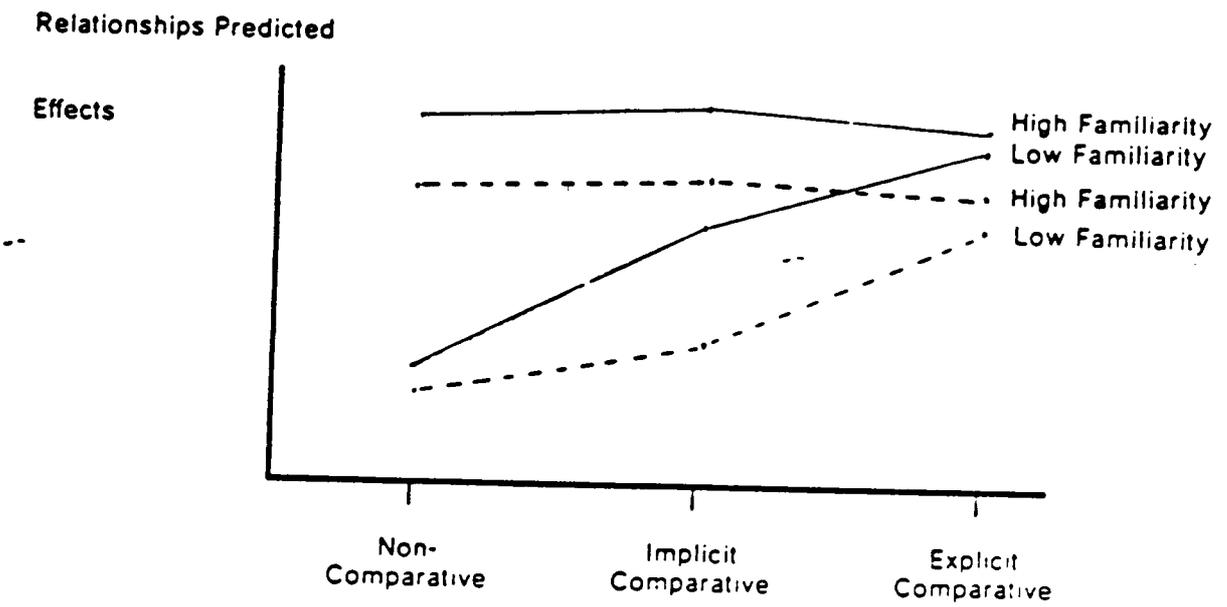


Figure 8

Extreme Usefulness of Brand Evaluation

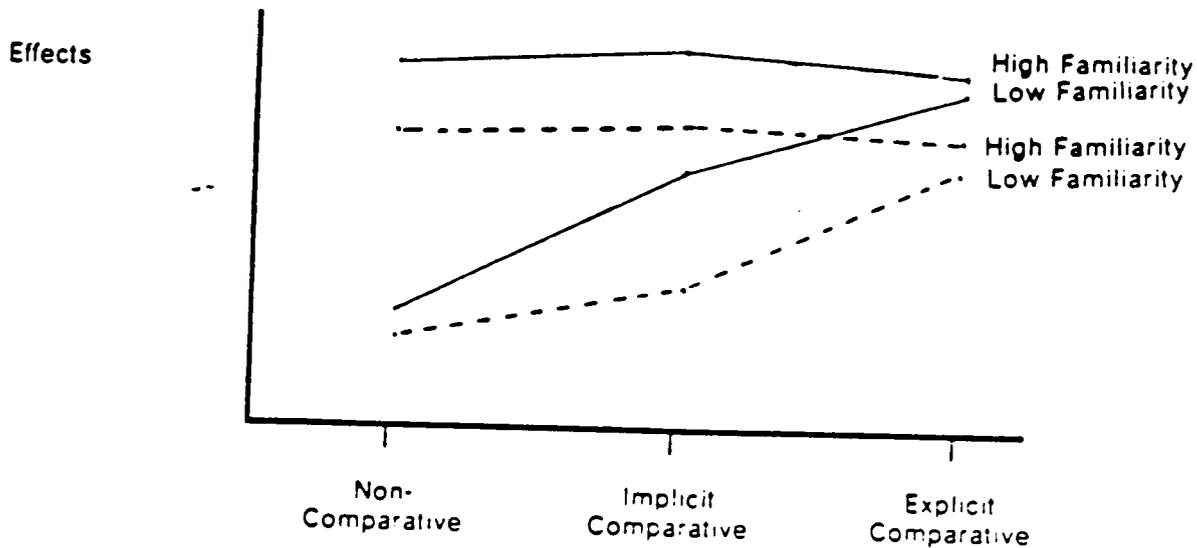


— Attribute Cues
- - - General Cues

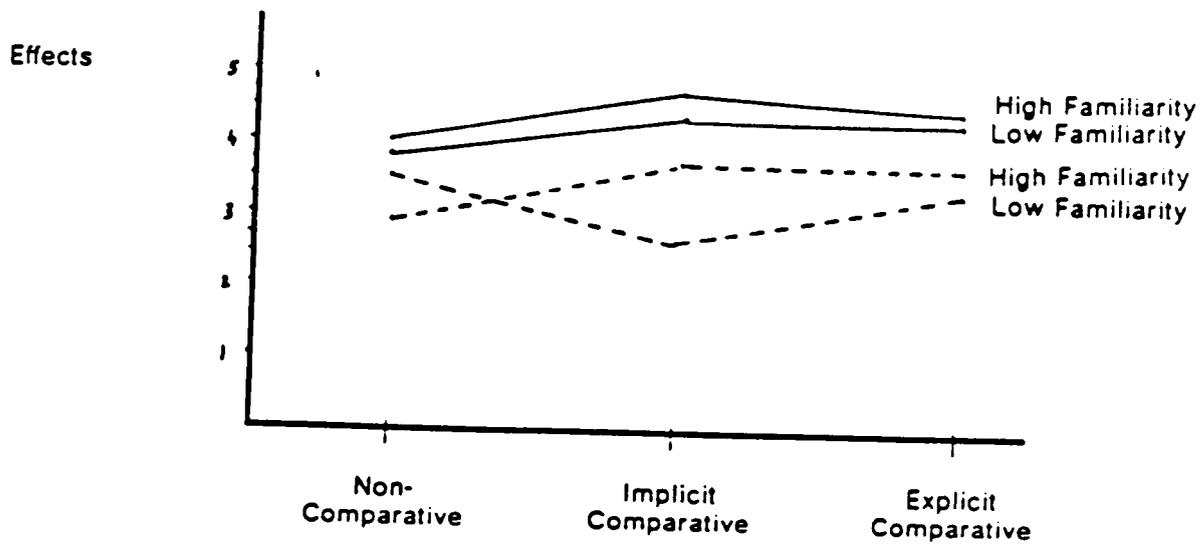
Figure 9

Confidence in Brand Evaluation

Relationships Predicted



Relationships Found



— Attribute Cues
- - - General Cues

Figure 10

Purchase Intention

6 - 10. According to the hypothesis, as comparisons in advertisements became more explicit, the difference between the responses of the high and low familiarity subjects should reduce. The results, shown for each dependent variable (Figures 6 - 10), failed to support this notion.

Hypothesis 4

The fourth hypothesis tested whether there would be any difference in the effects of advertisements with attribute cues and those with general cues, regardless of the type of comparisons in advertisements and subjects' familiarity. It was discussed in Chapter 2 that the effects of advertisements with attribute cues should be greater than those with general cues. Thus, the results of this hypothesis test were expected to show greater effects of attribute cues than general cues in advertisements.

The results of the fourth hypothesis for each dependent variable with related p-values are shown in Table 16. As shown in the table, the type of cues significantly influenced subjects' perceptions of informativeness of advertisements ($p = .000$). Duncan's test of comparison of means showed that the informativeness of advertisements with attribute cues was higher than the advertisement with general cues ($\alpha = .05$) (see Table 17).

The type of cues also influenced other variables, as shown in Table 16. Subjects' confidence in brand evaluations and purchase intention were influenced by the type of cues in advertisements ($p = .001$ and $p = .000$, respectively). Further, as shown in Table 17, Duncan's test for comparison of means shows that the

Table 16

Test of Hypothesis 4

Effects of Cues in Advertisements

Independent Variables	Degrees of Freedom	<u>Dependent Variables</u>									
		<u>F value</u>	<u>p-value</u>	<u>Informaliveness of Advertisement</u>	<u>Extreme Affective Brand Evaluation</u>	<u>Extreme Usefulness of Brand Evaluation</u>	<u>Confidence in Brand Evaluation</u>	<u>F value</u>	<u>p-value</u>	<u>Purchase Intention</u>	
Cues	(1,167)	157.84	.000	2.83	.094	2.42	.122	10.93	.001	26.84	.000
<u>Interactions</u>											
Cues x Comparison	(2,167)	1.91	.151	2.43	.100	.08	.922	.11	.899	.24	.786
Cues x Familiarity	(1,167)	.00	1.000	.09	.765	.22	.641	.77	.382	.88	.351
Cues x Comparison x Familiarity	(2,167)	.51	.602	.20	.818	.31	.735	.82	.442	1.87	.158

Table 17

Test of Hypothesis 4

Duncan's Multiple Range Test for
Comparison of Means for Significant
ANOVA F Values

Dependent Variable	Type of Cues in Advertisement	
	<u>General</u>	<u>Attribute</u>
Informativeness of Advertisement	2.773	4.649*
Confidence in Brand Evaluation	4.572	5.113*
Purchase Intention	3.380	4.316*

* significantly different at $\alpha = .05$

confidence in evaluation as well as purchase intention were higher with advertisements containing attribute cues than those containing general cues ($\alpha = .05$ for each).

The results show that the attribute and general cues did not differentially influence the subjects' responses to extreme affective and usefulness of brand evaluations. These results are also exhibited in Figures 6 - 10. For each dependent variable, the means are plotted for attribute and general cues. For instance, for informativeness of advertisements, the subjects' responses to advertisements with attribute cues are significantly higher than to the advertisements with general cues. Similarly, confidence and purchase intention were higher with attribute cues than general cues in the advertisements.

Thus, Hypothesis 4 was partially supported. It was found that the type of cues significantly influenced the subjects' perceptions of informativeness of advertisements, confidence in brand evaluations, and purchase intention. In each case, the attribute cues were more effective than the general cues.

Before proceeding to discuss the implications of the results, it is appropriate to summarize them. Therefore, a summary of the findings of the study is provided next, followed by a summary of the chapter.

Compendium of the Findings

This subsection summarizes the results of the hypothesis tests. Included in this summary are findings related to each dependent variable, i.e., perceived informativeness of advertisements, extreme affective brand evaluation, extreme

usefulness of brand evaluation, confidence in evaluation and purchase intention. In the following summary of the results, numbers 1 through 4 list the results of the first hypothesis, whereas numbers 5 and 6 list the results of the second hypothesis. The results of the third hypothesis are summarized in number 7, and finally, the results of the fourth hypothesis are summarized in numbers 8 and 9:

1. High familiarity consumers perceive explicit comparative advertisements more informative than noncomparative advertisements, with both attribute and general cues.

2. High familiarity consumers have more extreme affective brand evaluation, when exposed to explicit comparative advertisements, than when exposed to noncomparative advertisements, for both attribute and general cues.

3. For high familiarity consumers, noncomparative, implicit comparative, and explicit comparative advertisements are equally effective, for both attribute and general cues, on extreme usefulness of brand evaluation and confidence in evaluation.

4. However, high familiarity consumers' purchase intention is greater with explicit and implicit comparative advertisements than with noncomparative advertisement, for both attribute and general cues.

5. Low familiarity consumers perceive explicit comparative advertisements more informative than noncomparative advertisements, with both attribute and general cues.

6. For low familiarity consumers, noncomparative, implicit comparative and explicit comparative advertisements are equally effective (for both attribute and general cues) on extreme affective brand evaluation, extreme usefulness of brand evaluation, confidence in evaluation, and purchase intention.

7. Increasing the level of comparisons in advertisements does not produce similar responses from high and low familiarity consumers, for attribute or general cues, on perceived informativeness of advertisements, extreme affective or usefulness of brand evaluation, confidence in evaluation and purchase intention.

8. For both high familiarity and low familiarity consumers, for all advertisements (noncomparative, implicit comparative and explicit comparative advertisements), perception of advertisement informativeness, confidence in evaluation, and purchase intention are greater with attribute cues than general cues in advertisements.

9. However, both high and low familiarity consumers' affective brand evaluation and usefulness of brand evaluation are no more extreme for advertisements (noncomparative, implicit comparative and explicit comparative advertisements) with attribute cues than for advertisements with general cues.

Summary

In summary, this chapter discussed the pretests of subjects' familiarity measurement and dependent measures. It also presented the analytic procedures and findings of the study. After assessing subjects' familiarity with cameras, it was shown that there was no dominance of either gender in high or low familiarity subjects. Further, a confirmatory factor analysis was done on the question items of dependent variables. After eliminating the inadequate items, composite scores of each dependent variables were obtained.

Next, the hypotheses were tested by analysis of variance. While Hypothesis 3 was not supported, Hypotheses 1, 2, and 4 were partially supported. It was found that the noncomparative, implicit comparative and explicit comparative advertising equally influenced high familiarity consumers (regardless of specificity of cues) for the extreme usefulness of brand evaluation, and confidence in brand evaluation. It was also found that the increasing degree of comparisons in advertisement was more effective on low familiarity consumers, as related to the informativeness of the advertisements. Finally, attribute cues were found to raise the informativeness, confidence and purchase intention more than the general cues. The implications of these findings are discussed in the next chapter.

CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

Overview

This chapter provides an overview of the study and discusses conclusions that can be drawn from the results. This is followed by a discussion of theoretical, methodological, and substantive implications of this research. Next, the limitations and boundaries of the study are identified. Finally, suggestions for future research are also made at the end of the chapter.

Study Overview

To appropriately interpret the results of this study, it is important to keep in mind the contexts in which it was carried out. To facilitate such a task, a very brief overview of the study is provided next.

Objectives

This research sought to better understand the conceptual underpinnings of comparative advertising. The theoretical approach used in past comparative advertising investigations was based on the cognitive response framework. However, past research provided contradictory results, leaving one to suspect the adequacy of understanding of comparative advertising phenomenon. Using principles of categorization, this research reconceptualized the phenomenon of comparative advertising.

Examination of the issues in comparative advertising assisted in identifying several dimensions of comparative advertising. These dimensions were summarized in Exhibit I in Chapter 2. This research focused on two of the dimensions, specifically, the nature of comparisons and the cues in an advertisement. Further, it was argued that consumers' prior knowledge about a product would influence their responses to comparative advertising. With the categorization framework to process information, this research also investigated the effects of consumers' familiarity with the product and the cues presented in advertisements.

Hypotheses and Operationalizations of Variables

Several hypotheses were derived from the conceptual framework of comparative advertising presented after a review of the literature. These hypotheses incorporated effects of different levels of comparisons and cues in advertisements and differing levels of consumers' familiarity with a product. Thus, the three independent variables used in this research were comparisons in advertisements (3 levels), cues in advertisements (2 levels) and consumers' familiarity with a product (2 levels).

The three levels of comparisons in advertisements included no comparison, implicit comparison and explicit comparison between the sponsored brand and the challenging brand. These advertisements also contained either general or attribute cues. The consumers were distinguished between high and low familiarity with a product category. Consumers' familiarity was measured for cameras by an objective scale which included multiple dimensions of familiarity.

The four dependent variables used in this study were informativeness of advertisement, extremity of brand evaluation, confidence in evaluation and purchase intention. Each dependent variable was measured by a number of questions, the responses to which were averaged to form an index of each dependent variable.

Data Collection and Analyses

The familiarity scale was pretested several times to refine the measures of familiarity. Results of the final pretest showed that cameras were the most appropriate product category to distinguish the subjects between high and low

familiarity groups. In a laboratory setting, student subjects were randomly exposed to a print advertisement depending upon the experimental condition they were in. Subjects' responses to dependent measures and familiarity with camera were captured in a questionnaire. After verifying absence of gender dominance in high and low familiarity subjects, the dependent measures instrument was assessed for reliability of items measuring various dependent variables. Confirmatory factor analysis on question items revealed that brand evaluation dependent variable could be separated into two dependent variables, i.e., affective and usefulness of brand evaluation. Next, the reliability of various questions for dependent measures was assessed. With high reliability of questions and low inter-correlations between the dependent variables, hypotheses were tested by univariate analysis of variance.

Results

The results showed partial support for Hypotheses 1, 2 and 4, whereas Hypothesis 3 was not supported. To briefly recapitulate, Hypothesis 1 was supported for two dependent variables, i.e., the extreme usefulness of brand evaluation, and confidence in evaluation. For both of these variables, noncomparative, explicit comparative and implicit comparative advertisements were equally effective on high familiarity subjects, for both attribute and general cues. However, Hypothesis 1 was not supported for perceived informativeness of advertisements, extreme affective brand evaluation, and purchase intention. For each of these three dependent variables, the explicit comparative advertisement was more effective than the noncomparative advertisement, on high familiarity subjects, for both attribute and general cues.

On the other hand, Hypothesis 2 was supported only for the perceived informativeness of advertisements, i.e., the explicit comparative advertisement was perceived by low familiarity subjects as more informative than the noncomparative advertisement, for both attribute and general cues.

Hypothesis 3 was not supported. It was hypothesized that as the comparisons in advertisements become more explicit, the low familiarity subjects' responses would be similar to those of the high familiarity subjects. The results did not provide support for this hypothesis.

Finally, Hypothesis 4 was partially supported. It was hypothesized that for high as well as low familiarity consumers, for all advertisements, responses to the advertisements with attribute cues would be greater than those to the advertisements with general cues. This hypothesis was upheld for the perceived informativeness of advertisements, confidence in evaluation, and purchase intention. However, Hypothesis 4 was not supported for the extreme affective or the usefulness of brand evaluation. That is, the subjects' responses to the advertisements with attributes cues were not significantly different from those to the advertisements with general cues for these two variables.

The results noted above suggest various conclusions about consumers with differing levels of familiarity when they are exposed to advertisements with different degrees of comparisons and cues. The following section provides a discussion of these results.

Discussion

The purpose of the following exposition is to note how the findings of this study add to the knowledge related to comparative advertising. An attempt is made to compare the findings of this study with those of the past investigations. Given that this research was based on a different theoretical framework than the one commonly used in the past investigations, the initial focus of this discussion is on each hypothesis. Then, the findings with respect to different dependent variables are integrated with the past research findings on those dependent variables.

Hypothesis 1 dealt with the responses of high familiarity consumers to noncomparative, implicit comparative and explicit comparative advertisements. It was contended that because of well-developed category knowledge of high familiarity consumers, there should be no difference in the effects of noncomparative, implicit comparative and explicit comparative advertisements on the dependent variables examined. The results show equal effects of these advertisements on high familiarity consumers for extreme usefulness of brand evaluation and confidence in evaluation. It appears that the high familiarity consumers' experiences with the product and related knowledge enables them in deciding the utility of the product to them as well as make the evaluations confidently. Thus, the relatively low amount of information in an advertisement, as in noncomparative advertisements, does not jeopardize the high familiarity consumers' ability to confidently determine the utility of the product to them. This may be because, as explained earlier, these consumers can bring their knowledge and experiences to bear and can conduct comparisons with less assistance from the advertisement. On other hand, greater amount of information, as in explicit

comparative advertisements, does not augment the high familiarity consumers' ability to evaluate the utility of the product and confidence in their evaluations.

For other dependent variables, i.e., informativeness of advertisement, extreme affective brand evaluation, and purchase intention, explicit comparative advertisement was more effective than noncomparative advertisement. That is, in some respects, greater amount of information provided in explicit comparative advertisements is valuable to the high familiarity consumers. With more information, they not only find the explicit comparative advertisements more informative, but their affective evaluation is more extreme and their purchase intention is higher. These results make a supportive case for comparative advertising as an advertising approach that a marketer can take to advertise a product to the high familiarity consumers. Based on the findings of this research, by advertising a product comparatively, a marketer can better inform the high familiarity consumers about the product, and can thereby influence their affective evaluations as well as purchase intention favorably.

The results discussed above add to the current understanding about the perceived informativeness of comparative advertising. It was noted in the review of literature that non-owners of the sponsored brand found comparative advertisements to be more informative when intensity of comparison was low rather than moderate or high (Pride, Lamb and Pletcher 1977). Their investigation included measuring informativeness of different comparative advertisements but not the informativeness of comparative advertisements vis-a-vis noncomparative advertisements. By analyzing the informativeness of comparative *and* noncomparative advertisements with different cues, this study provides a measure of the informativeness of comparative advertisements relative to that of the noncomparative advertisements.

Dealing with consumers' expertise, Sujan and Dekleva (1987) reported greater perceived informativeness of (explicit) comparative advertisement than (product class) noncomparative advertisement for experts and novices. While corroborating the Sujan and Dekleva (1987) finding, this research extends the knowledge about perceived informativeness by analyzing the informativeness of implicit comparative advertisement in addition to the explicit and noncomparative advertisements. As discussed earlier, the results showed that high familiarity consumers perceived the implicit and explicit comparative advertisements more informative than the noncomparative advertisements. Further addition to the knowledge about perceived informativeness of the advertisements was made by analyzing the effects of variations in cues. It was shown that the advertisements with attribute cues were perceived as more informative than those with general cues.

The knowledge about high familiarity consumers' responses to comparative advertising is also extended for an additional dependent variable. As related to extremity of brand evaluations, Sujan and Dekleva (1987) reported that the expert consumers' evaluations are more extreme with (explicit) comparative advertisements than noncomparative advertisements. By distinguishing between affective and usefulness of brand evaluations, this research shows that the high familiarity consumers' affective, but not usefulness of brand, evaluations are more extreme with explicit comparative advertisements than noncomparative advertisements.

Hypothesis 2 dealt with the responses of low familiarity consumers to noncomparative, implicit comparative and explicit comparative advertisements. It was contended that because the low familiarity consumers do not have extensive prior knowledge, the more explicit the comparisons in an advertisement, the more effective the advertisement will be on them. The results show that informativeness

of the explicit comparative advertisement was perceived to be greater than that of the noncomparative advertisement by the low familiarity consumers. However, there was no significant difference in the effects of the noncomparative, implicit comparative and explicit comparative advertisements on extreme affective and usefulness of brand evaluations, confidence and purchase intention. That is, while the explicit comparisons in advertisements do provide more information to the low familiarity consumers, these comparisons are not sufficient to generate greater effects on the other dependent variables. A plausible explanation for such a finding may be that the low familiarity consumers lack well-developed category knowledge, which may inhibit their evaluation of the advertisement and the product.

The findings related to the second hypothesis not only corroborate the findings reported by Sujan (1985), but also add to the understanding of information processing by low familiarity consumers by considering their reactions to the comparative advertisements. Sujan (1985) reported that novices process information in a category-based mode only. Given that low familiarity consumers are not likely to process information in piecemeal mode, attribute information about the sponsored brand in an advertisement may not be processed by them. Therefore, comparisons between brands on attributes may not be useful to the low familiarity consumers. Moreover, because of their lack of extensive product category knowledge, low familiarity consumers do not process general comparisons between brands either. Overall, it appears that consumers' low familiarity with a product category does not allow them to process the comparisons between brands. Therefore, different levels of comparisons in advertisements are equally effective for the low familiarity consumers.

The third hypothesis dealt with the interaction between comparisons in advertisements and familiarity of consumers. The responses of high familiarity and

low familiarity consumers were not found to be similar for attribute or general cues as the comparisons in advertisements became more explicit. Lack of support for this may be due to the fact that low familiarity consumers do not respond more favorably to the increasing degree of comparisons in advertisements. Due to their low familiarity with a product, the comparisons between brands by attribute or general cues may not be sufficient for the low familiarity consumers to effectively evaluate the sponsored brand. That is, their inability to process the information presented in advertisements cannot be reduced by providing them with comparisons between brands. Thus, low familiarity consumers' responses may not be similar to those of high familiarity consumers as comparisons become more explicit.

The fourth hypothesis tested whether or not the (high and low familiarity) consumers' responses to all advertisements with attribute cues would be higher than to the advertisements with general cues. The results verified greater effectiveness of the advertisements (noncomparative, implicit comparative and explicit comparative) with attribute cues than the similar advertisements with general cues for perceived informativeness, confidence in evaluation and purchase intention, but not extreme affective or extreme usefulness of brand evaluations.

It appears that attribute cues about the sponsored brand provide more information to the consumers than general cues, raising the consumers' confidence in their evaluations. Further, the variations in cues do not differentially influence the consumers' extreme affective and usefulness of brand evaluation. Nonetheless, the relatively greater amount of information about the sponsored brand in an advertisement, as with attribute cues, augments the consumers' purchase intention.

The results of the fourth hypothesis exemplify the usefulness of categorization perspective in comparative advertising. These results, as discussed below,

indirectly show that the consumers may process the information in a category-based mode.

It must be noted that presentation of attributes of the sponsored brand in an advertisement encourages piecemeal processing by consumers whereas presentation of general information about the sponsored brand encourages category-based processing. As stated above, the subjects responded more favorably to the advertisements with attribute cues than general cues with respect to informativeness, confidence, and purchase intention. Thus, there may appear to be a limited evidence of attribute cues raising the effectiveness of comparative advertisements. In other words, the comparative advertisements may be more effective if the consumers process the information in a piecemeal mode. This notion may indeed argue against the categorization perspective. However, it may be premature to arrive at such a conclusion without a close examination of the findings related to the brand evaluations.

The results showed that the consumers' affective and usefulness of the brand evaluations were no more extreme with attribute cues than with general cues. This suggests that additional information provided by the attribute cues does not assist the consumers in their evaluation any more than the information provided by the general cues. If the consumers had processed in the piecemeal mode, their evaluation of the sponsored brand would be strongly influenced by the attribute cues as these cues provide the consumers with additional information that the general cues do not. The lack of significant difference in the consumers' extreme affective and usefulness of the brand evaluations for attribute and general cues lowers possibility of the consumers processing in a piecemeal mode. In fact, it is quite possible that the consumers pursued category-based processing. This is because in the category-based processing, when a brand is compared with another,

the affect associated with the compared brand is transferred to the brand undertaking the comparison (c.f. Fiske and Pavelchak 1985). In such a case, the consumers would not benefit from the additional information in the advertisement, as presented by the attribute cues. Thus, there is limited evidence of consumers processing the advertisements in a category-based mode.

Finally, the knowledge about consumers' purchase intention of the sponsored brand is also extended by this study through delineation of the effects of varying degrees of comparisons, familiarity and cues. It was discussed in the review of literature that while some researchers (e.g., Golden 1979; Shimp and Dyer 1978) report no significant effect of comparative advertising on purchase intentions, others (e.g., O'Connor 1986) report that comparative advertising could raise consumers' purchase intentions. The results of this study showed that the high familiarity consumers' purchase intention is higher with implicit and explicit comparative advertisements. Moreover, the attribute information in the advertisements also raise the purchase purchase intention of the consumers.

Implications of the Research

While contributing to the existing body of knowledge on comparative advertising, this research has several implications at theoretical, methodological and substantive levels. This section discusses the implications at all three levels.

Theoretical

The concept of comparing brands has become quite common in advertising. Over the years, the practice of comparative advertising has risen considerably. In parallel, researchers' interest in determining the effectiveness of comparative advertising has also risen. Existing empirical results are equivocal with different studies indicating superiority and inferiority of comparative advertising on different as well as some of the same variables. The conflicting results have obscured the understanding of comparative advertising.

The conceptual underpinnings of comparative advertising have not been well understood. By examining the underpinnings of comparative advertising and, critically reviewing results of the past investigations, this study presented a case for a clear understanding of the phenomenon of comparative advertising. Categorization principles were applied to comparative advertising for its clearer conceptualization. It was noted that by comparing a brand with another, an advertiser seeks to reposition the brand in consumers' minds. Repositioning of a brand involves its recategorization in consumers' minds. Several dimensions of comparative advertising were identified with categorization perspective. This research used two of the dimensions, i.e., explicitness of comparisons and consumers' processing of the advertisement.

An additional implication for researchers in comparative advertising stems from the conceptual distinction made between consumers' expertise and familiarity. This research adopted the view, as contended by Alba and Hutchinson (1987), that consumers' expertise is related to their ability to perform product related tasks successfully. On the other hand, consumers' familiarity refers to the number of

product-related experiences accumulated by the consumers (Alba and Hutchinson 1987). As this research sought to use the consumers' differing levels of prior knowledge about the product category, and collect their responses to the advertisement upon exposure, the subjects were differentiated on the basis of their familiarity with the product. Thus, another theoretical implication of this research is related to the distinction between the expertise and familiarity.

Finally, this study also distinguished the brand evaluations into two distinct measures. The results of the factor analysis showed that various measures used to determine consumers' evaluations of the sponsored brand could be grouped into the affective evaluations and usefulness of the brand evaluations. The delineation of brand evaluation into separate constructs is an additional contribution of this study. These separate constructs should prove useful to a researcher in correctly measuring appropriate brand evaluations.

Overall, this research first exhibited the need to reconceptualize comparative advertising and then, by using the categorization principles, provided a reconceptualization of comparative advertising. Theoretically, how comparative advertising may work was discussed and impacts of consumers' familiarity with a product category and their modes of processing were investigated.

Methodological

A few methodological advancements were achieved in this study. As stated in the previous section, if research in comparative advertising focuses consumers' knowledge, it manifests in their familiarity, not expertise. The scale of familiarity developed in this research is an objective scale that could be used for any product

category. The fourteen-item scale of familiarity was refined over three pretests using different subjects every time. Development of this scale was an important accomplishment of this research and should be of value in future research in comparative advertising.

The ability to distinguish between high and low familiarity consumers has additional implications for advertising research. As discussed earlier, past research used the median split method to classify consumers with high and low expertise. An unfortunate consequence of this method is inadvertent classification of subjects near the median score on either side. However, by including subjects on the high and low end of the familiarity scale, the problem of misclassification of subjects was avoided.

The final methodological implication of this research is related to usage of multiple items to measure dependent variables. It was noted in Chapter 2 that past comparative advertising research has used single items to measure dependent variables. Thus, assessment of reliability of measures was not possible. This research used multiple items for each dependent variable. Specifically, informativeness of advertisement and purchase intention were measured by three items. Additionally, brand evaluation dependent variable was distinguished between affective and usefulness of brand evaluations. Each brand evaluation variable was measured by three items. Finally, confidence in evaluation was measured for each of the brand evaluation items. Reliabilities of each dependent variable were assessed and were found to be high. Due to their high reliabilities, these items should prove useful in future research investigating the effects on these variables.

Substantive

There are several strategic implications of this research for advertisers using comparative advertising to promote their brands. Depending upon their objectives, attribute comparisons in advertisements can prove to be valuable tools to the advertisers. Keeping in mind that this research used a fictitious brand, the substantive implications of this research are appropriate for a new brand entering the market. As such, a common objective of advertisers would be to inform consumers about features of the brand. While there are several ways to achieve this objective, this research shows that providing comparisons on some attributes between the sponsored brand and another would better serve the purpose, then by simply presenting the attributes in an advertisement.

Another important implication of this research for an advertiser is to provide attribute information in advertisements. This research has shown that the presence of attribute cues in advertisements is valuable to consumers. Advertisements with features of the brand are not only informative to consumers, but also raise their purchase intentions. Results show that for high as well as low familiarity consumers, advertisements with attribute cues generate higher purchase intentions than those with general cues. Further, it was shown that high familiarity consumers find explicit comparative advertisements more informative than noncomparative advertisements. As well, high familiarity consumers' purchase intentions were higher with explicit comparative advertisements than with noncomparative advertisements. Therefore, another substantive implication of this research for a marketing manager is to advertise brand attribute comparisons.

The findings related to consumers' differing levels of familiarity also suggest different advertising strategies for a marketer. It was shown that high familiarity consumers found explicit comparative advertisements more informative than noncomparative advertisements and their purchase intentions were higher with explicit comparative advertisements than noncomparative advertisements. These findings suggest advertising comparatively in a specialty magazine for the product (e.g., "Popular Photography" for cameras). Generally, the readership of such magazines is limited to consumers with special interest in the product category. Due to the nature of such magazines, the readers are generally very familiar with the product category. The findings of this study suggest advertising in such magazines comparatively may satisfy an advertiser's objective of raising (high familiarity) consumers' purchase intentions.

Low familiarity consumers, on the other hand, were not influenced by increasing comparisons in advertisements. The results showed that although they found explicit comparative advertisements more informative than noncomparative advertisements, low familiarity consumers' purchase intentions were not influenced by type of comparisons. Noting that past research shows some evidence of greater counterargumentation with comparative advertising than noncomparative advertising, it may not be advisable for a marketer to advertise comparatively to low familiarity consumers. In fact, because noncomparative advertisements are as effective as explicit and implicit comparative advertisements for low familiarity consumers, noncomparative advertisements would present a safe alternative to a marketer. The findings of this study suggest a noncomparative advertising approach in general magazines to reach low familiarity consumers.

Limitations and Boundaries of the Research

When evaluating the contribution and the confidence that can be placed in that knowledge that a particular research finding makes, it is important to establish the scope and limits of that research finding (McGrath and Brinberg 1983). In accordance with The Validity Network Schema of McGrath and Brinberg (1983), this research was pursued after combining issues from the substantive, conceptual and methodological domains. As a result of this combination, an experimental design was developed to test the hypotheses. An undesirable, however unavoidable, consequence of experimental research is the sacrifice of the generality of findings (Fromkin and Streufert 1976). Thus, one of the weaknesses of this research is lower generalizability of the findings. Albeit, cautions, such as development of realistic advertisements, were taken to minimize artificiality of the research. While acknowledging lower generalizability, it must be noted that this research was theory-based. Concurrent to the framework of conducting theory-based research proposed by Calder et al. (1981), the goal of this research was to achieve precision, which is best achieved by experimental research (Fromkin and Streufert 1976).

Another weakness of this study is its reliance on induction, with its associated problems. One of the problems of inductivism relevant to this research is that observations are guided by theories, theories that may be incomplete or infallible. Thus, "Observation statements are always made in the language of some theory and will be as precise as the theoretical or conceptual framework that they utilize is precise" (Chalmers 1979, p.27). While this research was guided by the theoretical propositions developed earlier, the infallibility of the theoretical base can only be verified by more investigations in the future.

A methodological limitation of this research relates to the use a single method to obtain observations for this research. This research used experimental setting and obtained subjects responses to dependent variables using paper-and-pencil measures on interval scales. According to McGrath, Martin and Kulka (1982), a researcher should use a diversity of methods to attain robustness and generalizability of findings. Admittedly, this research used only one method to obtain data, although endeavors of using multiple methods should be undertaken in future research.

The use of cameras as the product category and print as the medium of communication may serve to delimit the findings of this research. It must be noted that this research used only one other brand of camera for comparison purposes, and thus, consumers' reactions to the advertisements were limited to two brands. However, a camera is a product that generally entails information acquisition on different brands by consumers. Depending upon the nature of the product (e.g., cameras), consumers may undertake extensive information search which may include exposure to advertisements comparing more than two brands of the product. Consumers' reactions to advertisements with multiple brand comparisons cannot be predicted on the basis of findings of this research.

Finally, a note about print advertisements is in order. This research used near-ready print advertisements for presenting information about the brand(s). Therefore, consumers' reactions are based on a single exposure to the print advertisement. Thus, whether consumers may react the same way if exposed to comparative advertisements in another medium cannot be speculated.

Suggestions for Future Research

There are several questions that remain unexamined and unanswered in this research. This section discusses the issues for further investigations stimulated by this study.

Effects of Other Dimensions of Comparative Advertising

In the process of developing theoretical foundations of this research, several dimensions of comparative advertising were identified. This research focussed on two of them, leaving several dimensions untested for their effects on consumers. However, for adequate interpretation of results, it may be necessary to incorporate two or three dimensions in a study. Therefore, investigating effects of all the dimensions will undoubtedly require several research studies. Results of each study may serve as building blocks to ultimately develop a taxonomy of comparative advertising. Moreover, such a research stream would also enable determining the most appropriate strategy to advertise to consumers with differing levels of familiarity.

Type of Product

Past research has used a variety of products with students as well as non-students as subjects. This research used cameras as the product, partly

because of their relevancy to the subjects. If cameras are used in future research, perhaps actual potential consumers should be used. That might shed additional light on their evaluations. Another fruitful approach would be to use another type of product. Variation in the products on dimensions, such as risk, could be influential in consumers' responses to comparative advertising. Depending upon the nature of the product, consumers' perceptions of associated risks will be different. Correspondingly, their receptivity to comparisons in advertisements will be different. Thus, effects of variation in the types of product should be investigated for their impact on comparative advertising.

Medium of Communication

This research used print medium to expose the subjects to test advertisements. Inherently, comparative advertising invites consumers to process the comparisons. Therefore, it is incumbent upon the researcher to present the advertisement to subjects that would facilitate processing of comparisons. One way to ensure that subjects have an opportunity to process the message is to allow them to look at the advertisement for a sufficient amount of time. Print medium permits consumers to do so. With the objective of allowing consumers to process the message in advertisements, subjects were exposed to print advertisement in this research.

Another popular medium of advertising is television. However, a unique characteristic of television advertising is that consumers do not have any control over the length of exposure to advertisements. In order to allow consumers to sufficiently process comparative advertisements on television, it would be

necessary to repeat the message. That is, frequency of exposure will influence consumers' reactions to comparative advertising. Future research in comparative advertising using television commercials can benefit by investigating the effect of frequency of exposures.

Involvement

As discussed earlier, by identifying competing brands, a comparative advertisement provides a frame of reference to consumers for evaluation of the sponsored brand. That is, inherently, comparative advertising appears to invite consumers to carefully and thoughtfully consider the issues. Deliberate processing of a persuasive message could be likened to central processing, in the framework of involvement suggested by Petty and Cacioppo (1981). On the other hand, a noncomparative advertisement presenting a mere supportive case for the brand may be processed peripherally. These notions of central versus peripheral processing of comparative and noncomparative messages need to be developed further to be tested in a research, an outcome that could be pursued in future.

Causal Modeling Approach

Over the last few years, several causal modeling applications have been reported in the advertising literature. The phenomenon of comparative advertising is amenable to the development of a causal model. For instance, the effects of comparative advertising on purchase intention can be investigated with a causal

modeling approach using LISREL. Briefly, LISREL is used to estimate the unknown coefficients in a set of linear structural equations. Variables in the system of equations can be either directly observed variables or unmeasured latent variables (i.e., hypothetical constructs). In general, the LISREL model assumes that there is a causal structure among a set of latent variables, with the latent variables acting as underlying causes of the observed variables. LISREL's ability to handle models with latent variables, measurement errors, and reciprocal causation make it a viable tool to use in the research of comparative advertising.

Summary

In summary, this research reconceptualized the phenomenon of comparative advertising. It examined the relevant dimensions of comparative advertising and tested two of them in an experimental setting. The research established the importance of providing attribute information to consumers with varying degree of familiarity. It also identified the appropriate format of comparison in an advertisement to favorably influence consumers' perceptions of informativeness and purchase intentions. Despite a few limitations in this research, several theoretical, methodological, and substantive contributions were made, and numerous ideas for future research were stimulated.

REFERENCES

- Aaker, David A., and George S. Day (1986), Marketing Research, New York, NY: John Wiley and Sons.
- Adelson, Beth (1984), "When Novices Surpass Experts: The Difficulty of a Task May Increase with Expertise," Journal of Experimental Psychology: Learning, Memory and Cognition, 10 (July), 483-495.
- Alba, Joseph W., and J. Wesley Hutchinson (1987), "Dimensions of Consumer Expertise," Journal of Consumer Research, 13 (March), 411-54.
- Anglin, Jeremy M. (1977), Word, Object and Conceptual Development, New York, NY: Norton.
- Ash, Stephen B., and Chow-Hou Wee (1983), "Comparative Advertising: A Review with Implications for Further Research," in Advances in Consumer Research, Vol. 10, R. P. Bagozzi, and A. M. Tybout, eds., Ann Arbor, Michigan: Association for Consumer Research, 370-76.
- Assael, Henry (1987), Consumer Behavior and Marketing Action, Boston, MA: Kent Publishing Company.
- Bagozzi, Richard P., and Youjae Yi (1988), "On the Evaluation of Structural Equation Models," Journal of the Academy of Marketing Science, 16 (Spring), 74-94.
- Belch, George E. (1981), "An Examination of Comparative and Noncomparative Television Commercials: The Effects of Claim Variation and Repetition on Cognitive Response and Message Acceptance," Journal of Marketing Research, 18 (August), 333-49.
- Berkman, Harold W., and Christopher Gilson (1987), Advertising Concepts and Strategies, New York, N.Y.: Random House Publications, Inc.

- Berkman, Harold W., and Christopher Gilson (1986), Consumer Behavior: Concepts and Strategies, Boston, MA: PWS-Kent Publishing Company.
- Bettman, James R. (1979), An Information Processing Theory of Consumer Choice, Reading, MA: Addison Wesley Publishing Company.
- Brucks, Merrie (1985), "The Effects of Product Class Knowledge on Information Search Behavior," Journal of Consumer Research, 12 (June), 1-16.
- Burnkrant, Robert E., and Alan G. Sawyer (1983), "Effects of Involvement and Message Content on Information Processing Intensity," in Information Processing Research in Advertising, Richard J. Harris, ed., Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cacioppo, John T., and Richard E. Petty (1980), "Sex Differences in Influenceability: Toward Specifying the Underlying Processes," Personality and Social Psychology Bulletin, 6 (December), 651-56.
- Calder, Bobby J., Lynn W. Phillips, Alice M. Tybout (1981), "Designing Research for Application," Journal of Consumer Research, 8 (September), 191-201.
- Camacho-Villarreal, Angelina (1985), "Effects of Product Class Knowledge on the Evaluation of Comparative Versus Noncomparative Messages," in Advances in Consumer Research, Vol. 12, E. Hirschman and M. B. Holbrook, eds., Provo, UT: Association for Consumer Research, 504-09.
- Cantor, Nancy, E. E. Smith, R. D. French, J. Mezzich (1980), "Psychiatric Diagnosis as Prototype Categorization," Journal of Abnormal Psychology, 89, 181-93.
- Cantor, Nancy, Walter Mischel, and J. C. Schwartz (1982), "A Prototype Analysis of Psychological Situations," Cognitive Psychology, 14, 45-77.
- Chalmers, A. F. (1982), What is This Thing Called Science, Queensland, Australia: University of Queensland Press.
- Chou, Linly, George R. Franke and Gary B. Wilcox (1987), "The Information Content of Comparative Magazine Ads: A Longitudinal Analysis," Journalism Quarterly, 64, 119-24.
- Churchill, Gilbert A. Jr. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs," Journal of Marketing Research, 16 (February), 64-73.
- Cohen, Jacob (1977), Statistical Power Analysis for the Behavioral Sciences, New York, NY: Academic Press.
- Cohen Joel B. (1982), "The Role of Affect in Categorization: Toward a Reconsideration of the Concept of Attitude," in Advances in Consumer Research, Vol. 9, Andrew Mitchell ed., Ann Arbor, MI: Association for Consumer Research, 94-100.

- Cohen, Joel B. (1983), "Involvement and You: 1000 Great Ideas," in Advances in Consumer Research, Vol. 10, Richard P. Bagozzi, and Alice M. Tybout, eds., Ann Arbor, MI: Association for Consumer Research, 325-28.
- Cook, Thomas D. and Donald T. Campbell (1979), Design and Analysis of Quasi-Experiments for Field Settings, Chicago, IL: Rand McNally.
- Cronbach, L. J., and P. E. Meehl (1955), "Construct Validity in Psychological Tests" Psychological Bulletin, 52, 281-302.
- Demirdjian, Z. S. (1983), "Sales Effectiveness of Comparative Advertising: An Experimental Field Investigation," Journal of Consumer Research, 10 (December), 362-64.
- Demirdjian, Z. S. (1986), "Attitudinal and Behavioral Response to Comparative Advertising: An Experimental Field Analysis," in Developments in Marketing Science, Vol. 9, N. K. Malhotra and J. M. Hawes (eds.), Academy of Marketing Science, 288-92.
- Doob Anthony M., Merrill J. Carlsmith, Jonathan L. Freedman, Thomas K. Landauer, and Thomas K. Soleng, Jr. (1969), "Effect of Initial Selling Price on Subsequent Sales," Journal of Personality and Social Psychology, 11 (April), 345-50.
- Dougherty, J. W. D. (1978), "Salience and Relativity in Classification," American Ethnologist, 5 (February), 66-80.
- Earl, Ronald L. and William M. Pride (1980), "The Effects of Advertisement Structure, Message Sidedness, and Performance Test Results on Print Advertisements Informativeness," Journal of Advertising, 9 (3), 36-45.
- Emory, William C. (1980), Business Research Methods, Homewood, IL: Richard D. Irwin, Inc.
- Engel, James F., Roger D. Blackwell, and Paul W. Miniard (1986), Consumer Behavior, 5th ed. New York, N.Y.: The Dryden Press.
- Engel, James F., David L. Kollat, and Roger D. Blackwell (1973), Consumer Behavior, 2nd ed., New York, N.Y.: Holt, Rinehart and Winston.
- Etgar, Michael and Goodwin, Stephen A. (1978), "Comparative Advertising: Issues and Problems," in Advances in Consumer Research, Vol. 5, Keith B. Hunt, ed., Association for Consumer Research, 63-71.
- Etgar, Michael (1979), "Consumer Reactions to Explicit Brand Comparisons in Advertisements," Journal of Marketing Research, 16 (November), 517-32.
- Farris, Paul W., and Albion, Mark S. (1980), "The Impact of Advertising on the Prices of Consumer Products," Journal of Marketing, 44 (Summer), 17-35.

- Fiske, Susan T. (1982), "Schema-Triggered Affect: Applications to Social Perception," in Affect and Cognition, Margaret Sydnor and Susan T. Fiske, eds., Hillsdale, N.J.: Lawrence Erlbaum Associates, 55-78.
- Fiske, Susan T., Donald R. Kinder, and Michael W. Larter (1983), "The Novice and the Expert: Knowledge-Based Strategies in Political Cognition," Journal of Experimental Social Psychology, 19 (July), 381-400.
- Fiske, Susan T., and Mark A. Pavelchak (1985), "Category-Based versus Piecemeal-Based Responses: Developments in Schema Triggered Affect," in The Handbook of Motivation and Cognition: Foundations of Social Behavior, Richard M. Sorrentino and E. Tory Higgins, eds., New York, N.Y.: Guilford Press, 167-203.
- Fromkin, Howard L. and Siegfried Streufert (1976), "Laboratory Experimentation," in Marvin D. Dunnette (ed.), Handbook of Industrial and Organizational Psychology, Chicago: Rand McNally, 415-65.
- Golden, Linda (1976), "Consumer Reactions to Comparative Advertising," in Advances in Consumer Research, Vol. 3, B. B. Anderson, ed., Ann Arbor, MI: Association for Consumer Research, 63-7.
- Golden, Linda L. (1979), "Consumer Reactions to Explicit Brand Comparisons in Advertisements," Journal of Marketing Research, 16 (November), 517-32.
- Goodwin Stephen A. and Etgar, Michael (1980), "An Experimental Investigation of Comparative Advertising: Impact of Message Appeal, Information Load, and Utility of Product Class," Journal of Marketing Research, 17 (May), 187-202.
- Gorn, Gerald J. and Charles B. Weinberg (1983), "Comparative Advertising: Some Positive Results," in Advances in Consumer Research, Vol. 10, R. P. Bagozzi, and A. M. Tybout, eds., Ann Arbor, MI: Association for Consumer Research, 377-80.
- Gorn, Gerald J. and Charles B. Weinberg (1984), "The Impact of Comparative Advertising on Perception and Attitude: Some Positive Findings", Journal of Consumer Research, 14 (September), 719-27.
- Greenwald, Anthony A. (1968), "Cognitive Learning, Cognitive Response to Persuasion and Attitude Change, in Psychological Foundations of Attitudes, Anthony G. Greenwald, Timothy C. Brock and Thomas M. Ostram, eds., New York: Academic Press, 147-70.
- Greenwald, Anthony G. (1976), "Within - Subjects Designs: To Use or Not to Use?," Psychological Bulletin, 83 (2), 314-20.
- Hair, Joseph F. Jr., Rolph E. Anderson, Ronald L. Tatham (1987), Multivariate Data Analysis, New York, N.Y.: Macmillan Publishing Company.

- Houston, Michael J., and Michael L. Rothschild (1977), "A Paradigm for Research on Consumer Involvement," unpublished Paper, Graduate School of Business, University of Wisconsin, Madison.
- Hunn, E. (1976), "Toward a Perceptual Model of Folk Biological Classification," American Ethnologist, 3, 508-24.
- Jain, Subhash C. and Hackleman, Edwin C. (1978), "How Effective is Comparative Advertising for stimulating Brand Recall?" Journal of Advertising, 7 (3), 20-5.
- Joreskog, Karl G., and Dag Sorbom (1984), LISREL: Analysis of Linear Structure Relationships by the Method of Maximum Likelihood, Mooresville, IN: Scientific Software.
- Judd, Charles M. and David A. Kenny (1982), "Research Design and Research Validity," New Directions for Methodology of Social and Behavioral Science: Forms of Validity in Research, 12 (June), San Francisco: Jossey-Bass, 23-39.
- Keppel, Geoffrey (1982), Design and Analysis: A Researcher's Handbook, Englewood Cliffs, NJ: Prentice Hall.
- Lamb, Charles W. Jr., William M. Pride, and Barbara A. Pletcher (1977), "A Taxonomy for Comparative Advertising Research," Journal of Advertising, 7 (Winter), 43-7.
- Lamb, Charles W. Jr., Barbara A. Pletcher, and William A. Pride (1979), "Print Readers' Perceptions of Various Advertising Formats," Journalism Quarterly, 56 (??), 328-335.
- Laudan, Larry (1984), Science and Values: The Aims of Science and Their Role in Scientific Debate, Berkely, CA: University of California Press.
- Lavidge, R. J. and G. A. Steiner (1961), "A Model for Predictive Measurements of Advertising Effectiveness," Journal of Marketing, 25 (October), 59-62.
- Levine, Philip (1976), "Commercials That Name Competing Brands," Journal of Advertising Research, 16, (December), 7-14.
- Levy, Sidney J. (1983), "How Comparative is Comparative Advertising?," in Advances in Consumer Research, Vol 10, R. P. Bagozzi, and A. M. Tybout (eds.), Ann Arbor, Michigan: Association for Consumer Research, 381-82.
- Lincoln, Douglas J. and Coskun A. Samli (1979), "Empirical Evidence of Comparative Advertising's Effects: A Review and Synthesis," in Summer Educators' Proceedings, American Marketing Association, 367-70.
- Mazis, Michael (1976), "A Theoretical and Empirical Examination of Comparative Advertising," Working Paper, University of Florida.
- McDougall, Gordon H. (1977), "Comparative Advertising: Consumer Issues and Attitudes," in Contemporary Marketing Thought, Educators' Proceedings,

- Barnett A. Greenberg and Danny N. Bellenger, eds., American Marketing Association, 286-291.
- McGrath, Joseph E., and David Brinberg (1983), "External Validity and the Research Process: A Comment of the Calder/Lynch Dialogue," Journal of Consumer Research, 10 (June), 115-24.
- McGrath Joseph E., Joanne Martin, and Richard A. Kulka (1982), Judgment Calls in Research, Beverly Hills, CA: Sage Publications.
- Mervis, Carolyn B., and Eleanor Rosch (1981), "Categorization of Natural Objects," Annual Review of Psychology, 32, 89-115.
- Mervis, Carolyn B., and Maria A. Crisafi (1982), "Order of Acquisition of Subordinate-, Basic- Superordinate-Level Categories," Child Development, 53 (February), 258-66.
- Murphy, John H. II and Mary S. Amundsen (1981), "The Communications-Effectiveness of Comparative Advertising for a New Brand on Users of the Dominant Brand," Journal of Advertising, 10 (1), 14-20.
- Nelson, Catherine (1977), "Cognitive Development and the Acquisition of Concepts," in Schooling and the Acquisition of Knowledge, Richard C. Anderson, Rand J. Spiro, and William E. Montague, eds., Hillsdale, NJ: Gardner, 223-285.
- Nunnally, Jum C. (1967), Psychometric Theory, New York, N.Y.: McGraw-Hill Book Company.
- Nunnally, Jum C. (1978), Psychometric Theory, 2nd ed., New York, N.Y.: McGraw-Hill Book Company.
- O'Connor, Paul J. (1984), "Comparative Advertising Effects of an Actual New Brand Introduction," in Marketing Comes of Age, D. M. Klein, and A. E. Smith, eds., Proceedings of the Annual Meeting of the Southern Marketing Association, (November, 14-17), 51-4.
- O'Connor, Paul J. (1986), "The Information Value of Comparative Advertising Mediating Purchase Intention", AMA Educators Proceedings, American Marketing Association Series #52, 23-7.
- Ogilvy and Mather Company (1976), "An Investigation into the Effects of Comparative Print Advertising That Names Competing Brands," Unpublished Research.
- Ogilvy and Mather Company (1977), "A Further Investigation into the Effects of Comparative Television Advertising That Names Competing Brands," Unpublished Research.
- Ott, Lyman (1984), An Introduction to Statistical Methods and Data Analysis, Boston, MA: PWS Publishers.

- Peter, Paul J. and Larry Tarpey (1975), "A Comparative Analysis of Three Consumer Decision Strategies," Journal of Consumer Research, 2 (June), 29-37.
- Peter, Paul J. (1979), "Reliability: A Review of Psychometric Basics and Recent Marketing Practices," Journal of Marketing Research, 16 (February), 6-17.
- Peter, Paul J. (1981), "Construct Validity: A Review of Basic Issues and Marketing Practices," Journal of Marketing Research, 18 (May), 133-45.
- Peter, Paul J., and Gilbert A. Churchill, Jr. (1986), "Relationships Among Research Design Choices and Psychometric Properties of Rating Scales: A Meta-Analysis," Journal of Marketing Research, 23 (February), 1-10.
- Petty, Richard E., and John T. Cacioppo (1981), Attitudes and Persuasion: Classic and Contemporary Approaches, Dubuque, IA: William C. Brown.
- 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, 10 (September), 135-46.
- Petty, Richard E., Thomas Ostrom, and Timothy C. Brock (1981), "Historical Foundations of the Cognitive Response Approach to Attitudes and Persuasion," in Cognitive Responses in Persuasion, Richard E. Petty, Thomas Ostrom, and Timothy C. Brock, eds., Hillsdale, NJ: Lawrence Erlbaum Associates, 5-29.
- Prasad, Kanti V. (1976), "Communications Effectiveness of Comparative Advertising: A Laboratory Analysis," Journal of Marketing Research, 13 (May), 128-37.
- Perdue, Barbara C. and John O. Summers (1986), "Checking the Success of Manipulations in Marketing Experiments," Journal of Marketing Research, 23 (November), 317-26.
- Pride, William M., Charles W. Lamb, and Barbara A. Pletcher (1977), "Are Comparative Advertisements More Informative for Owners of the Mentioned Competing Brand Than for Nonowners?," in AMA Educators Proceedings, Barnett A. Greenberg and Danny N. Ballanger (eds.), American Marketing Association, 298-301.
- Rao, Akshay R. (1986), "The Impact of Product Familiarity on the Price-Perceived Quality Relationship," Unpublished Dissertation, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061.
- Ray, Michael L. (1982), Advertising and Communication Management, Engelwood Cliffs, NJ: Prentice-Hall, Inc.
- Ray, Michael L., Alan G. Sawyer, Michael L. Rothschild, Roger M. Heeler, Edward C. Strong, and Jerome B. Reed (1973), "Marketing Communication and the Hierarchy of Effects," New Models for Mass Communication Research, Vol. 2, P. Clark, ed., Beverly Hills, CA: Sage Publications.

- Rosch, Eleanor (1978), "Principles of Categorization," Cognition and Categorization, E. Rosch and B.B. Lloyd eds., Hillsdale, N.J.: Lawrence Erlbaum Associates, 27-48.
- Rosch, Eleanor, Carolyn B. Mervis, Wayne D. Gray, David M. Johnson, and Penny Boyes-Braem (1976), "Basic Objects in Natural Categories," Cognitive Psychology, 8 (July), 382-439.
- Rosenthal, Robert (1984), Meta Analytic Procedures for Social Research, Sage Publications, Beverly Hills, CA., Applied Social Research Methods Series, 6.
- Rosenthal Robert, and Ralph L. Rosnow (1984), Essentials of Behavioral Research Methods and Data Analysis, New York, N.Y.: McGraw Hill Book Company,
- Rosenthal Robert, and Donald B. Rubin (1980), "Comparing Within - and Between - Subjects studies," Sociological Methods & Research, 9 (August), 127-36.
- Sawyer, Alan G. (1975), "Demand artifacts in Laboratory Experiments in Consumer Research," Journal of Consumer Research, 1 (March), 20-30.
- Sawyer, Alan, and A. Dwayne Ball (1981), "Statistical Power and Effect Size in Marketing Research," Journal of Marketing Research, 18 (August), 275-90.
- Schoenfeld, Alan, and Douglas J. Herrmann (1982), "Problem Perception and Knowledge Structure in Expert and Novice Mathematical Problem Solvers," Journal of Experimental Psychology: Learning, Memory, and Cognition, 8 (Septmeber), 484-94.
- Sewall, Murphy A., and Michael H. Goldstein (1979), "The Comparative Price Advertising Controvesy: Consumer Perceptions of Catalog Showroom Reference Prices," Journal of Marketing, 43 (Summer), 85-92.
- Shimp, Terence, A. and Dyer, David C. (1978), "The Effects Comparative Advertising Mediated by Market Position Sponsoring Brand," Journal of Advertising, 3 (Summer), 13-9.
- Stevenson Thomas H. and Linda E. Swayne (1986), "Comparative Advertising in Industrial Trade Publications: A Longitudinal Study," in Marketing in an Environment of Change, Proceedings of the Annual Meeting of Southern Marketing Association, 121-24.
- Stewart, David W. (1981), "The Application and Misapplication of Factor Analysis in Marketing Research," Journal of Marketing Reseach, 18 (February), 51-62.
- Sttuts, Mary A. (1982), "Comparative Advertising and Counterarguments," Journal of the Academy of Marketing Science, 10 (Summer), 302-13.
- Sujan, Mita (1985), "Consumer Knowledge: Effects on Evaluation Strategies Mediating Consumer Judgements," Journal of Consumer Research, 12 (June), 31-46.

- Sujan, Mita, and Christine Dekleva (1987), "Product Categorization and Inference Making: Some Implications for Comparative Advertising," Journal of Consumer Research, 14 (September), 372-78.
- Swinyard, William R. (1981), "The Interaction Between Comparative Advertising and Copy Claim Variation," Journal of Marketing, 18 (May), 175-86.
- Tversky, S. (1977), "Features of Similarity", Psychological Review, 84, 327-352.
- Walker, Beth A., John L. Swasy, and Arno J. Rethans (1986), "The Impact of Comparative Advertising on Perception Formation in New Product Introductions," in Advances in Consumer Research, Vol. 13, Richard J. Lutz, ed., Las Vegas: Association for Consumer Research, 121-25.
- Wilkie, William L. and Farris, Paul (1975), "Comparison Advertising: Problem and Potential," Journal of Marketing, 39 (October), 7-15.
- Wilson, R. Dale (1976), "An Empirical Evaluation of Comparative Advertising Messages: Subjects' Responses on Perceptual Dimensions," in Advances in Consumer Research, Vol. 3, Beverlee B. Anderson, ed., Ann Arbor : Association for Consumer Research, 53-7.
- Wilson, R. Dale, and Mudderisoglu, Aydin (1980), "An Analysis of Cognitive Responses to Comparative Advertising," in Advances in Consumer Research, Vol. 7, Jeery C. Olson, ed., San Francisco: Association for Consumer Research, 566-71.
- Wind, Yoram, and Joseph Denny (1974), "Multivariate Analysis of Variance in Research on the Effectiveness of TV Commercials," Journal of Marketing Research, 11 (May), 136-42.
- Winer, B. J. (1971), Statistical Principle in Experimental Design, New York, N.Y.: McGraw-Hill Book Company.
- Wright, Peter L. (1973), "The Cognitive Processes Mediating Acceptance of Advertising," Journal of Marketing Research, 10 (February), 53-62.
- Wright, Peter L. (1975), "Factors Affecting Cognitive Resistance to Advertising," Journal of Consumer Research, 2 (June), 1-9.

APPENDIX A

Instructions

We are interested in finding out how consumers typically evaluate some products. Please answer all the questions about different products that are mentioned on the following pages. You are requested to answer the questions in as honest a manner as possible. If you have filled out this questionnaire before, please do not do so a second time. Thank you.

3. In the Blacksburg area, please name all the stores that you can think of that carry these products.

Running Shoes

Camera

Bicycles

Compact Disc Players

4. Please list all the situations, where you think it would be appropriate to use the product.

Running Shoes

Camera

Bicycles

Compact Disc Players

5. How many times have you purchased this product?

	never (0)	once (1)	twice (2)	three times or more (3)	don't know (4)
Running Shoes	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____	_____
CD Players	_____	_____	_____	_____	_____

6. How long ago was the last time you purchased the product?

	less than 6 mos. (3)	6 mos. to 1 yr. (2)	more than 1 yr. (1)	don't know (0)	does not apply (4)
Running Shoes	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____	_____
CD Players	_____	_____	_____	_____	_____

7. Who did you purchase the product for?

	myself	someone else	can't remember	does not apply
Running shoes	_____	_____	_____	_____
Camera	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____
CD Players	_____	_____	_____	_____

8. Do you presently own this product?

	(1)	(0)
Running Shoes	Yes _____	No _____
Camera	Yes _____	No _____
Bicycles	Yes _____	No _____
CD Players	Yes _____	No _____

9. How often do you use the product?

	never (0)	rarely (1)	sometimes (2)	often (3)	always (4)	does not apply (5)
Running Shoes	_____	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____	_____	_____
CD Players	_____	_____	_____	_____	_____	_____

10. Please list all the characteristics you think are important in evaluating the product?

Running Shoes	Camera	Bicycles	CD Players
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

11. Please list all familiar brand names for each of the products below.

Running Shoes	Camera	Bicycles	CD Players
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

12. If you had an occasion to buy the product, would you look for information about the product?

Running Shoes	Yes _____	No _____
Camera	Yes _____	No _____
Bicycles	Yes _____	No _____
CD Players	Yes _____	No _____

13. Please list the sources you would consult to obtain information about the product (if you would not consult any sources, please indicate so).

Running Shoes

Camera

Bicycles

Compact Disc Players

14. When was the last time you searched for information on this product?

within last 6 mos. (3)	between 6 mos. & 1 yr. ago (2)	more than 1 yr. ago (1)	don't know (0)	didn't search for information (5)
---	---	--	-------------------------------	--

Running Shoes	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____	_____
CD Players	_____	_____	_____	_____	_____

15. How did you search for information about this product? (Please check all that apply.)

	consulted friends &/or relatives	consulted consumer reports	consulted a sales person	other sources (please list)	
Running Shoes	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____	_____
CD Players	_____	_____	_____	_____	_____

16. How many advertisements of this product do you remember seeing in the last month?

	3 or less (1)	4 to 6 (2)	7 or more (3)	Don't Know (0)
Running Shoes	_____	_____	_____	_____
Camera	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____
CD Players	_____	_____	_____	_____

17. Where did you see or hear those advertisements? (Please check all that apply.)

	newspaper	billboards	magazine	television	other (please list)
Running Shoes	_____	_____	_____	_____	_____ _____ _____
Camera	_____	_____	_____	_____	_____ _____ _____
Bicycles	_____	_____	_____	_____	_____ _____ _____
CD Players	_____	_____	_____	_____	_____ _____ _____

18. How familiar are you with the product?

	extremely familiar (3)	very familiar (2)	somewhat familiar (1)	unfamiliar (0)
Running Shoes	_____	_____	_____	_____
Camera	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____
CD Players	_____	_____	_____	_____

Following questions are related to **running shoes** only (please do not guess any answer).

19. In general, _____ soles provide less traction on a surface:

- a. polyurethane
- b. canvas
- c. gum rubber
- d. don't know

20. To keep calf muscles from stretching too much during running, you would want a(an) _____ heel in a shoe.

- a. compact
- b. flattened
- c. elevated
- d. don't know

21. If you do not play court games and need a pair of shoes for walking, one of the less specialized _____ shoes may be the best kind.

- a. running
- b. walking
- c. turf
- d. don't know

Following questions are related to **camera** only (please do not guess any answer).

22. If you were to accidentally set a camera's ASA dial lower (e.g., at 100 ASA) than that suggested on the film's package (e.g., 400 ASA), your picture would tend to be:

- a. over exposed
- b. under exposed
- c. out of focus
- d. don't know

23. At 1/30 of a second it is easiest to handhold a camera with a _____ lens.

- a. telephoto (420mm)
- b. zoom lens (110mm to 210mm)
- c. wide angle lens (35mm)
- d. don't know

24. The shutter mechanisms most cameras employ are:

- a. ball shutters
- b. focal plane shutters
- c. ring structures
- d. don't know

Following questions are related to **bicycles** only (please do not guess any answer).

25. To help prevent fatigue and efficiently use your muscle power, you should bear down _____ on the pedals.

- a. hard
- b. soft
- c. neither a nor b
- d. don't know

26. Bicycles with _____ wheel rims generally provide best brake response.

- a. fiberglass
- b. steel
- c. aluminium
- d. don't know

27. For efficient pedaling, a bicycle seat should have _____.

- a. little or no padding
- b. a lot of padding
- c. neither a nor b
- d. don't know

Following questions are related to **compact disc players** only (please do not guess any answer).

28. A _____ not only provides distortion-free sound, but it also allows you to record the music yourself.

- a. compact disc
- b. digital audio tape
- c. cassette
- d. don't know

29. _____ are quite sensitive to minor scratches and dirt that life inflicts on them.

- a. cassettes
- b. vinyl records
- c. compact discs
- d. don't know

30. A _____ filter of a compact disc player is supposed to be better than an _____ filter at eliminating distortion during conversion of the digital signal into an audio signal.

- a. digital, analog
- b. analog, digital
- c. both filters are equal
- d. don't know

Please answer the following questions:

31. Soc. Sec. #: _____

32. Sex: Male _____ Female _____

33. Your Class Standing:

- a. Freshman
- b. Sophomore
- c. Junior
- d. Senior
- e. Graduate Student
- f. Other (please list):

Thank you for your cooperation.

APPENDIX B

Instructions

We are interested in finding out how consumers typically evaluate some products. Please answer all the questions about different products that are mentioned on the following pages. You are requested to answer the questions in as honest a manner as possible. Thank you.

2. Please list all situations where each product could be used.

Running Shoes

Camera

Bicycles

Compact Disc Players

3. Please list all the characteristics you think are important in evaluating the product?

Running Shoes

Camera

Bicycles

CD Players

4. How many times have you purchased this product?

never	once	twice	three times or more	don't know
(0)	(1)	(2)	(3)	(4)

Running Shoes

_____	_____	_____	_____	_____
-------	-------	-------	-------	-------

Camera

_____	_____	_____	_____	_____
-------	-------	-------	-------	-------

Bicycles

_____	_____	_____	_____	_____
-------	-------	-------	-------	-------

CD Players

_____	_____	_____	_____	_____
-------	-------	-------	-------	-------

5. How recently have you purchased the product?

	less than 1 yr. ago (3)	1 yr. to 3 yrs. ago (2)	more than 3 yrs. ago (1)	don't know (0)	does not apply (4)
Running Shoes	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____	_____
CD Players	_____	_____	_____	_____	_____

6. Do you presently own this product?

Running Shoes	(1) Yes _____	(0) No _____
Camera	Yes _____	No _____
Bicycles	Yes _____	No _____
CD Players	Yes _____	No _____

7. How often do you use the product?

	never (0)	rarely (1)	sometimes (2)	often (3)	always (4)	does not apply (5)
Running Shoes	_____	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____	_____	_____
CD Players	_____	_____	_____	_____	_____	_____

8. Please list all brands that come to mind in each product category.

Running Shoes	Camera	Bicycles	CD Players
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

9. When was the last time you sought information about each of the following products?

	within last 6 mos. (3)	between 6 mos. & 1 yr. ago (2)	more than 1 yr. ago (1)	don't know (0)	didn't search for information (5)
Running Shoes	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____	_____
CD Players	_____	_____	_____	_____	_____

10. How did you acquire information about each of the following products?
(please check all that apply.)

	talked to friends &/or relatives	looked at consumer magazines	talked to a sales person	other sources (please list)
Running Shoes	_____	_____	_____	_____ _____ _____
Camera	_____	_____	_____	_____ _____ _____
Bicycles	_____	_____	_____	_____ _____ _____
CD Players	_____	_____	_____	_____ _____ _____

11. How many advertisements for any brand of this product do you remember seeing or hearing about in the last month?

	3 or less (1)	4 to 6 (2)	7 or more (3)	Don't Know (0)
Running Shoes	_____	_____	_____	_____
Camera	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____
CD Players	_____	_____	_____	_____

12. Where did you see or hear those advertisements? (Please check all that apply.)

	newspaper	billboards	magazine	television	other (please list)
Running Shoes	_____	_____	_____	_____	_____ _____
Camera	_____	_____	_____	_____	_____ _____
Bicycles	_____	_____	_____	_____	_____ _____
CD Players	_____	_____	_____	_____	_____ _____

13. How familiar, overall, would you say you are with the product category?

	extremely familiar (3)	very familiar (2)	somewhat familiar (1)	unfamiliar (0)
Running Shoes	_____	_____	_____	_____
Camera	_____	_____	_____	_____
Bicycles	_____	_____	_____	_____
CD Players	_____	_____	_____	_____

Please answer the following questions:

14. Name: _____

15. Soc. Sec. #: _____

16. Sex: Male _____ Female _____

17. Your Class Standing:

- a. Freshman
- b. Sophomore
- c. Junior
- d. Senior
- e. Graduate Student
- f. Other (please list):

Thank you for your cooperation.

The Procedure to Score Subjects' Responses on
Product Familiarity Scale

Dimension measured	Question number	Response format	Coding
Product experience	1	Open-ended	One point per experience up to a maximum of seven
Awareness	11	"Don't know" "3 or less" "4 to 6" "7 or more"	Zero One Two Three
	12	Check list	Zero through five
Decision making	3	Open-ended	One point per characteristic up to a maximum of five
	8	open-ended	One point per name up to a maximum of five
	9	"Don't know" or "Didn't search for information" "Within last six mos" "Between 6 mos. and 1 yr. ago" "More than 1 yr. ago"	Zero Three Two One
	10	Check list	Zero through five (one point per source)
Usage	2	Open-ended	One point per situation up to a maximum of three
	4	"Never or don't know" "Once" "Twice" "Three times or more"	Zero One Two Three
	5	"Less than 1 yr. ago" "1 yr. to 3 yrs. ago" "More than 3 yrs. ago" "Don't know" or "does not apply"	Three Two One Zero

	6	"Yes" "No"	One Zero
	7	open-ended	One point per usage frequency (zero for "never" to four for "always"
Perceived familiarity	13	Unfamiliar - Extremely familiar	Zero through three

APPENDIX C

Instructions

We are interested in finding out how consumers typically evaluate some products. Please answer all the questions about different products the following pages. You are requested to answer the questions honestly. Thank you.

2. Please list all situations where each product could be used.

Running Shoes

Camera

Bicycle

3. Please list all the characteristics you think are important in evaluating the product?

Running Shoes

Camera

Bicycle

<hr/>	<hr/>	<hr/>

4. How many times have you purchased this product?

never (0)	once (1)	twice (2)	three times or more (3)	don't know (4)
--------------	-------------	--------------	-------------------------------	-------------------

Running Shoes _____

Camera _____

Bicycle _____

5. When was your last purchase of the product made?

less than 1 yr. ago (3)	1 yr. to 3 yrs. ago (2)	more than 3 yrs. ago (1)	don't know (0)	does not apply (4)
-------------------------------------	-------------------------------------	--------------------------------------	----------------------	-----------------------------

Running Shoes _____

Camera _____

Bicycle _____

6. Do you presently own this product?

(1)	(0)
-----	-----

Running Shoes Yes _____ No _____

Camera Yes _____ No _____

Bicycle Yes _____ No _____

7. How often do you use the product? (For example: Once a week, once a month, once a year, etc.)

Running Shoes: _____

Camera: _____

Bicycle: _____

8. Please list all brands that come to mind in each product category.

Running Shoes	Camera	Bicycle
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

9. When was the last time you purposefully sought out information about each of the following products?

	within last 6 mos. (3)	between 6 mos. & 1 yr. ago (2)	more than 1 yr. ago (1)	don't know (0)	didn't search for information (5)
Running Shoes	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____
Bicycle	_____	_____	_____	_____	_____

10. How did you acquire information about each of the following products?
(please check all that apply.)

	talked to friends &/or relatives	looked at consumer magazines	talked to a sales person	other sources (please list)
Running Shoes	_____	_____	_____	_____ _____ _____
Camera	_____	_____	_____	_____ _____ _____
Bicycle	_____	_____	_____	_____ _____ _____

11. How many advertisements for any brand of this product do you remember seeing or hearing about in the last month?

3 or less (1)	4 to 6 (2)	7 or more (3)	Don't Know (0)
-------------------------	----------------------	-------------------------	--------------------------

Running Shoes	_____	_____	_____	_____
Camera	_____	_____	_____	_____
Bicycle	_____	_____	_____	_____

12. Where did you see or hear those advertisements? (Please check all that apply.)

	newspaper	billboards	magazine	television	radio	other(please list)
--	------------------	-------------------	-----------------	-------------------	--------------	---------------------------

Running Shoes	_____	_____	_____	_____	_____	_____
Camera	_____	_____	_____	_____	_____	_____
Bicycle	_____	_____	_____	_____	_____	_____

13. How familiar, overall, would you say you are with the product category?

extremely familiar (3)	very familiar (2)	somewhat familiar (1)	unfamiliar (0)
----------------------------------	-----------------------------	---------------------------------	--------------------------

Running Shoes	_____	_____	_____	_____
Camera	_____	_____	_____	_____
Bicycle	_____	_____	_____	_____

Please answer the following questions:

14. Name: _____

15. Soc. Sec. #: _____

16. Sex: Male _____ Female _____

17. Your Class Standing:

- a. Freshman
- b. Sophomore
- c. Junior
- d. Senior
- e. Graduate Student
- f. Other (please list):

Thank you for your cooperation.

The Procedure to Score Subjects' Responses on
Product Familiarity Scale

Dimension measured	Question number	Response format	Coding
Product experience	1	Open-ended	One point per experience up to a maximum of seven
Awareness	11	"Don't know" "3 or less" "4 to 6" "7 or more"	Zero One Two Three
	12	Check list	Zero through five
Decision making	3	Open-ended	One point per characteristic up to a maximum of five
	8	open-ended	One point per name up to a maximum of five
	9	"Don't know" or "Didn't search for information" "Within last six mos" "Between 6 mos. and 1 yr. ago" "More than 1 yr. ago"	Zero
			Three
Two			
10	Check list	Zero through five (one point per source)	
Usage	2	Open-ended	One point per situation up to a maximum of three
	4	"Never or don't know" "Once" "Twice" "Three times or more"	Zero
			One
Two			
5	"Less than 1 yr. ago" "1 yr. to 3 yrs. ago" "More than 3 yrs. ago" "Don't know" or "does not apply"	Three	
		Two	
		One	
		Zero	

	6	"Yes" "No"	One Zero
	7	open-ended	One point per usage frequency (zero for "never" to five for "atleast once a day"
Perceived familiarity	13	Unfamiliar - Extremely familiar	Zero through three

APPENDIX D

PLEASE DO NOT open the envelopes yet. You will be instructed when to do so.

We are conducting a research project on marketing communications for a new camera. The findings of this research will help business organizations in communicating information about their products more effectively. Therefore, your contribution to this project is very important.

Thank you for participating in this research. Your assistance is highly appreciated.

You will be looking at a print-ready version of a test advertisement for a camera. When told to do so, please look at the advertisement as you would, any other advertisement you may have come across in a magazine. When you are finished looking at the advertisement, please put it back in the first envelope and put the envelope down on the floor. Then, take the questionnaire out from the second envelope and read the instructions on it.

APPENDIX E

Instructions

Please answer, as well as you can, all of the following questions about the material you just read. You are requested to answer the questions honestly. This is not a test. **Do not** go back and look at the advertisement once you have read these instructions. Also, while answering the questions on a page, **do not** look ahead to the next page. Please circle the correct answer and **do not** change your answers. You may begin now.

Turn to the next page and answer the questions please.

SECTION I

1. In the space below, please write the type of product advertised and the brand name of the product.

Please CIRCLE the number for each question that best describes your answer.

**Not at all
precise**

**Extremely
precise**

How precise was advertisement in providing information about the camera? (1)

1 2 3 4 5 6 7

**No
information
at all**

**A lot
of
information**

How much information about the camera did you obtain from the advertisement? (2)

1 2 3 4 5 6 7

**No
information
at all**

**A lot
of
information**

If you had to tell someone about the camera in the advertisement, how much information about it do you remember seeing in the advertisement? (3)

1 2 3 4 5 6 7

**Not at all
informative**

**Extremely
informative**

How informative was the advertisement about the camera? (4)

1 2 3 4 5 6 7

Please continue to the next page.

Please CIRCLE the number for each question that best describes your answer.

Now, please answer the following questions as though you were going on a vacation and need a new 35mm camera.

- | | | | | | | | |
|--|----------------------------------|---|---|---|---|---|---------------------------------|
| | Not at all
attractive | | | | | | Extremely
attractive |
| a. How attractive is the Pulsar A-25 camera? (5) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Not at all
confident | | | | | | Extremely
confident |
| b. How confident do you feel about your response? (6) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Not at all
favorable | | | | | | Extremely
favorable |
| a. How favorable is your impression of the Pulsar A-25 camera? (7) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Not at all
confident | | | | | | Extremely
confident |
| b. How confident do you feel about your response? (8) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Not at all
useful | | | | | | Extremely
useful |
| a. How useful would the Pulsar A-25 camera be to you? (9) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Not at all
confident | | | | | | Extremely
confident |
| b. How confident do you feel about your response? (10) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Please continue to the next page.

Please continue to answer the following questions as though you were going on a vacation and need a new 35mm camera.

		Not at all good					Extremely good	
a.	How good a brand is the Pulsar A-25 camera? (11)	1	2	3	4	5	6	7
		Not at all confident					Extremely confident	
b.	How confident do you feel about your response? (12)	1	2	3	4	5	6	7
		Not at all advantageous					Extremely advantageous	
a.	How advantageous would the Pulsar A-25 camera be to you? (13)	1	2	3	4	5	6	7
		Not at all confident					Extremely confident	
b.	How confident do you feel about your response? (14)	1	2	3	4	5	6	7
		Not at all beneficial					Extremely beneficial	
0 a.	How beneficial would the Pulsar A-25 camera be to you? (15)	1	2	3	4	5	6	7
		Not at all confident					Extremely confident	
b.	How confident do you feel about your response? (16)	1	2	3	4	5	6	7

Please continue to the next page.

Please continue to answer the following questions as though you were going on a vacation and need a new 35mm camera.

- | | Not at all positive | | | | | Extremely positive | |
|--|----------------------------|----------|----------|----------|----------|---------------------------|----------|
| a. How positive is your evaluation of the Pulsar A-25 camera? (17) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
-
- | | Not at all confident | | | | | Extremely confident | |
|--|-----------------------------|----------|----------|----------|----------|----------------------------|----------|
| b. How confident do you feel about your response? (18) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Please continue to the next page.

Please CIRCLE the number for each question that best describes your answer.

Please continue to answer the following questions as though you were going on a vacation and need a new 35mm camera.

- | | Very
low | | | | | | Very
high |
|---|------------------------------|---|---|---|---|---|---------------------------|
| 2. What is your likelihood of purchasing the Pulsar A-25 camera? (19) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Very
low | | | | | | Very
high |
| 3. How is your willingness to buy the Pulsar A-25 camera? (20) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Strongly
disagree | | | | | | Strongly
agree |
| 4. You would consider buying the Pulsar A-25 camera: (21) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Please continue to the next section.

16. Please list all situations where a camera could be used. (23)

_____	_____
_____	_____
_____	_____

17. Please list all the characteristics you think are important in evaluating a camera? (24)

_____	_____
_____	_____
_____	_____

18. How many times have you purchased a camera? (25)

never	once	twice	three times or more	don't know
(0)	(1)	(2)	(3)	(4)
_____	_____	_____	_____	_____

19. When was your last purchase of a camera made? (26)

less than 1 yr. ago	1 yr. to 3 yrs. ago	more than 3 yrs. ago	don't know	does not apply
(3)	(2)	(1)	(0)	(4)
_____	_____	_____	_____	_____

20. Do you presently own a camera? (27)

(1)	(0)
Yes_____	No_____

21. How often do you use a camera? (For example: Once a week, once a month, once a year, etc.) (28)

Please continue to the next page.

22. Please list all brands of cameras that come to your mind. (29)

_____	_____
_____	_____
_____	_____

23. When was the last time you purposefully sought out information about cameras? (30)

within last 6 mos. (3)	between 6 mos. & 1 yr. ago (2)	more than 1 yr. ago (1)	don't know (0)	didn't search for information (5)
---	---	--	-------------------------------	--

_____	_____	_____	_____	_____
-------	-------	-------	-------	-------

24. How did you acquire information about cameras? (please check all that apply.) (31)

talked to friends &/or relatives	looked at consumer magazines	talked to a sales person	other sources (please list)
---	---	---	--

_____	_____	_____	_____

25. How many advertisements for any brand of camera do you remember seeing or hearing about in the last month? (32)

3 or less (1)	4 to 6 (2)	7 or more (3)	Don't Know (0)
------------------------------	---------------------------	------------------------------	-------------------------------

_____	_____	_____	_____
-------	-------	-------	-------

26. Where did you see or hear those advertisements? (Please check all that apply.) (33)

newspaper	billboards	magazine	television	radio	other (please list)
------------------	-------------------	-----------------	-------------------	--------------	----------------------------

_____	_____	_____	_____	_____	_____

Please continue to the next page.

27. How familiar, overall, would you say you are with cameras?
(Check the most appropriate category). (34)

extremely familiar (3)	very familiar (2)	somewhat familiar (1)	unfamiliar (0)
_____	_____	_____	_____

Please continue to the next page.

Please answer the following questions:

28. Your sex: Male _____ Female _____ (35)
29. How old are you? _____ years (36)
30. Your Class Standing: (37)
- a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Graduate Student
 - f. Other (please list):
32. What is your major: _____ (38)

Now, please put the questionnaire upside down on the floor and wait for further instructions. Please **do not** talk to anyone or leave the room. Please sit quietly and wait for others to finish.

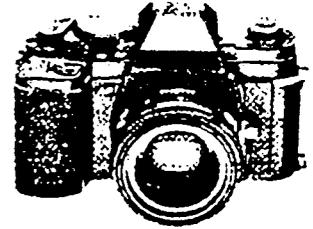
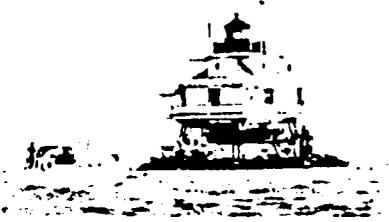
P.S. Please do not tell anyone about what you did in this research until April 27.

Thank you for your cooperation.

Appendix F

General Cues Noncomparative Advertisement

Introducing The Camera That's Really Loaded. For People Who Aren't.



It's the new Pulsar A - 25.

All camera makers boast a lot about what their camera can do. But the ultimate test is the new cameras they create. And of the 1990 crop, there's one camera that is clearly exceptional.

THE PULSAR A - 25

A new generation camera that lets you take professional quality pictures with advanced features.

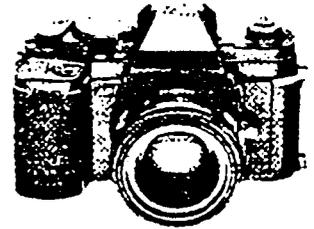
THE PULSAR A - 25

So now, no matter how much or how little picture taking experience you've had, there's a camera worthy of an admiring look...

THE PULSAR A - 25

General Cues Implicit Comparative Advertisement

Introducing The Camera That's Really Loaded. For People Who Aren't.



It's the new Pulsar A - 25.

All camera makers boast a lot about what their camera can do. But the ultimate test is the new cameras they create. And of the 1990 crop, there's one camera that is clearly exceptional.

THE PULSAR A - 25 Surpasses the Leading Camera...

A new generation camera that lets you take professional quality pictures with advanced features.

A revolutionary camera that leaves the leading brand of camera way behind...

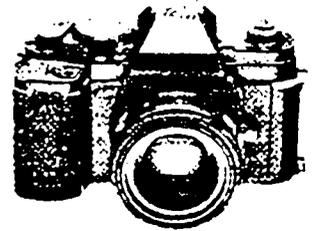
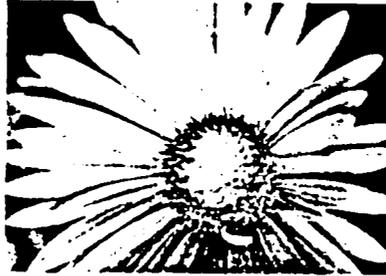
THE PULSAR A - 25

So now, no matter how much or how little picture taking experience you've had, there's a camera worthy of an admiring look...

THE PULSAR A - 25

General Cues Explicit Comparative Advertisement

Introducing The Camera That's Really Loaded. For People Who Aren't.



It's the new Pulsar A - 25.
With Features Far Superior Than Canon AE-1...

All camera makers boast a lot about what their camera can do. But the ultimate test is the new cameras they create. And of the 1990 crop, there's one camera that is clearly exceptional.

THE PULSAR A - 25

Surpasses the Canon AE-1...

A new generation camera that lets you take professional quality pictures with advanced features.

A revolutionary camera that leaves Canon AE-1 way behind...

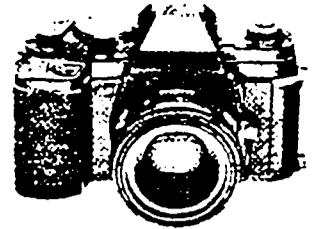
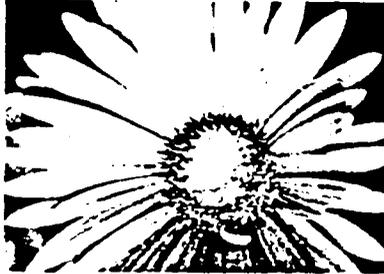
THE PULSAR A - 25

So now, no matter how much or how little picture taking experience you've had, there's a camera worthy of an admiring look...

THE PULSAR A - 25

Attribute Cues Noncomparative Advertisement

Introducing The Camera That's Really Loaded. For People Who Aren't.



It's the new Pulsar A - 25.

All camera makers boast a lot about what their camera can do. But the ultimate test is the new cameras they create. And of the 1990 crop, there's one camera that is clearly exceptional.

THE PULSAR A - 25

A new generation camera that lets you take professional quality pictures with advanced features:

- Auto Focus
- Auto Load, Auto Advance, Auto Rewind
- Automatic Shutter Speed AND Aperture
- Low Price

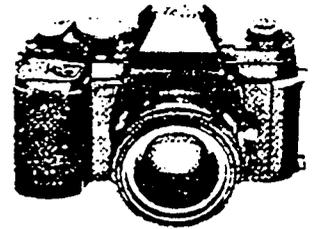
THE PULSAR A - 25

So now, no matter how much or how little picture taking experience you've had, there's a camera worthy of an admiring look...

THE PULSAR A - 25

Attribute Cues Implicit Comparative Advertisement

Introducing The Camera That's Really Loaded. For People Who Aren't.



It's the new Pulsar A - 25.

All camera makers boast a lot about what their camera can do. But the ultimate test is the new cameras they create. And of the 1990 crop, there's one camera that is clearly exceptional.

THE PULSAR A - 25

A new generation camera that lets you take professional quality pictures with features far superior than the leading brand.

Unlike the other brand, the PULSAR A-25 has:

- Auto Focus
- Automatic Shutter Speed AND Aperture
- Auto Load, Auto Advance, Auto Rewind
- Lower Price

The Pulsar A-25 scores higher points than the leading brand in all respects!

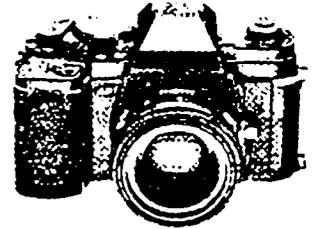
THE PULSAR A - 25

So now, no matter how much or how little picture taking experience you've had, there's a camera worthy of an admiring look..

THE PULSAR A - 25

Attribute Cues Explicit Comparative Advertisement

Introducing The Camera That's Really Loaded. For People Who Aren't.



It's the new Pulsar A - 25.

All camera makers boast a lot about what their camera can do. But the ultimate test is the new cameras they create. And of the 1990 crop, there's one camera that is clearly exceptional.

THE PULSAR A - 25

A new generation camera that lets you take professional quality pictures with features far superior than Canon AE-1...

	Canon AE-1	Pulsar A-25
Auto Focus	No	Yes
Automatic Shutter Speed AND Aperture	No	Yes
Auto Load, Auto Advance Auto Rewind	No	Yes
Price	\$250	\$175

The Pulsar A-25 scores higher points than Canon AE-1 in all respects!

THE PULSAR A - 25

So now, no matter how much or how little picture taking experience you've had, there's a camera worthy of an admiring look...

THE PULSAR A - 25

Appendix G

Sample Characteristics: Subjects' Sex, Age Group, Claas Standing, Major

Sex	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Male	120	45.3	120	45.3
Female	145	54.7	265	100.0

Age Group	Frequency	Percent	Cumulative Frequency	Cumulative Percent
19 or under	3	1.1	3	1.1
20 - 22	234	88.3	237	89.4
23 or above	28	10.6	265	100.0

Class Standnig	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Sophomore	3	1.1	3	1.1
Junior	166	62.6	169	63.7
Senior	95	35.8	264	99.5
Graduate Student	1	0.5	265	100.0

Major	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Marketing	129	48.6	129	48.6
Communication	18	6.7	147	55.3
Marketing Education	4	1.7	151	57.0
Management	9	3.4	160	60.4
Finance	16	6.0	176	66.4
Management Science	15	5.7	191	72.1
Other	74	27.9	265	100.0

APPENDIX H

While χ^2 , fit index, AGFI and RMR assist in determining the goodness of fit of the model, two other statistics i.e., modification index and normalized residuals assist in determining the contribution of individual items in the structure of the model. According to Jorskog and Sorbom (1984), the modification index of each item should be similar to each other, whereas the normalized residuals should be less than 2.0.

As the first step in the factor analysis, all the question items were submitted in the analysis as factors. According to Bagozzi and Yi (1988), such a factor model, identified as a null model, serves as a baseline model to compare other factor structure models with. As all items were considered as individual factors, the aforementioned statistics were expected to be show a poor fit of the model to the structure of the items. As expected, this solution resulted in a high χ^2 , a low AGFI, a high RMR, and a low fit index.

Next, a four factor model of the question items was sought. Given four dependent variables in the research, a four factor solution of the items was expected to separate the items according to the variables. Table 6 shows a high χ^2 , a low AGFI, a high RMR, and a low fit index of this model (M_1). Although, this model is better than the null model, the values of all the statistics indicate unacceptability of this model. The modification indices and normalized residuals of all the items were examined for possible deletion from the model. Several items had high modification indices and their normalized residuals were greater than 2.0. Thus, these items were considered contributing to the poor fit of the model. Therefore, these items were deleted from the model one at a time. (To check the improvement in the fit of the factor model, it was necessary to delete items one at a time). The items that were deleted from the model are identified below in the order of their deletion.

Specifically, an evaluation of the brand question i.e., "favorableness of the brand" was identified for deletion due to its high modification index and normalized residuals.

Deletion of this item resulted in a better fit (See model M_2 , Table 6) than the previous four factor model (M_1) as well as the null model. However, there remained several items in the model (M_2) with high modification indices and normalized residuals, indicating some room for improvement in the fit of the factor model.

Next, another brand evaluation question, i.e., "positive evaluation of the brand" was deleted which resulted in a better fit (see M_3 , Table 6). As the results of this model did not indicate a good fit, another brand evaluation item i.e., "attractiveness of the brand" was deleted. Although deletion of this item resulted in a better fit than the previous model (see M_4 , Table 6), there still were some items with high modification indices and normalized residuals. Therefore, another item with high modification index and normalized residuals was deleted. Specifically, an informativeness question "tell someone about the camera from the information remembered from the advertisement" was deleted which produced better results (see M_5 , Table 6). Next, due to its high modification index and normalized residuals, another brand evaluation item was deleted from the model. Specifically, "how good is the advertised brand" was deleted, resulting in a better fit (see M_6 , Table 6) than the previous model. However, there remained two items with high modification indices and normalized residuals. Next, a confidence measure associated with a brand evaluation question (related to the favorableness of the advertised brand) was deleted resulting in a better fit (see M_7 , Table 6). Although the results were better than before, there still remained another confidence measure (related to "attractiveness of brand" evaluation question) with high modification indices and normalized residuals. Therefore, this confidence item was also deleted. With the deletion of this confidence item, there remained no items with high modification index or normalized residuals. Further, the other statistics for this model (see M_8 , Table 6) were: AGFI = .897, RMR = .068 and, fit index = .967.

The factor scores of the remaining items separated the items by the dependent variables those items measured. That is, the remaining items of the informativeness of advertisement were: preciseness of advertisement, amount of information obtained from the advertisement and perceived informativeness of the advertisement. The brand evaluation questions remaining in the model were: how useful the brand is, how advantageous the brand is, and how beneficial the brand is. Moreover, of the seven confidence measures, five remained in the model. Finally, the model contained all three measures of purchase intention: Willingness to purchase, likelihood of purchasing and consider purchasing the brand. It may be noted that this four factor model resulted in eliminating seven of the twenty one items of the four dependent variables. In particular, of the seven brand evaluation items, four had to be eliminated. These four items, as discussed above, were: how attractive the brand is, how favorable the impression of the brand is, how good the brand is, and how positive the evaluation is. That is, these items could be grouped into a measure of affective evaluation. On the other hand, the items of evaluation remaining in the model (i.e., useful, advantageous, and beneficial) seem to refer to usefulness of the brand. Thus, two types of evaluative judgments are being captured by the seven measures of brand evaluation. That is, there appeared to be five factors in the set of question items rather than four, as investigated so far.

With the understanding that there may be five factors in the structure of the items, a five factor model was sought in the confirmatory factor analysis. Table 6 shows a high χ^2 , a low AGFI, a high RMR, and a low fit index of this model (M_5). Although, this model is better than the null model, the values of all the statistics indicate unacceptability of this model. The modification indices and normalized residuals of all the items were examined for possible deletion from the model. A few items had high modification indices and their normalized residuals of greater than 2.0.

Thus, these items were considered contributing to the poor fit of the model. Therefore, these items were deleted from the model one at a time.

Specifically, an evaluation of the brand question i.e., "attractiveness of the brand" was identified for deletion due to its high modification index and normalized residuals. Deletion of this item resulted in a better fit (See model M_{10} , Table 6) than the previous five factor model (M_9) as well as the null model. However, there remained several items in the model (M_{10}) with high modification indices and normalized residuals, indicating some room for improvement in the fit of the factor model.

Next, an informativeness item with high modification index and normalized residuals was deleted. Specifically, the item "tell someone about the camera from the information from the advertisement" was deleted which produced better results (see M_{11} , Table 6). Next, due to its high modification index and normalized residuals, a confidence measure was deleted. This confidence measure was associated with the brand evaluation question ("the attractiveness of the advertised brand"), and its deletion resulted in a better fit (see M_{12} , Table 6). Although the results were better than before, there still remained another confidence measure (related to "favorableness of brand" evaluation question) with high modification indices and normalized residuals. Therefore, this confidence item was also deleted. With the deletion of this confidence item, there remained no item with high modification index or normalized residuals. Further, the other statistics for this model (see M_{13} , Table 6) were: AGFI = .852, RMR = .072 and, fit index = .938.

The factor scores of the remaining items separated the items by the dependent variables those items measured. Indeed, the brand evaluation variable was factored into two measures. Three brand evaluation items (i.e., favorable, good, and positive evaluation of the brand) manifest a factor distinct from the other three brand evaluation items (i.e., useful, advantageous and beneficial). Thus, the brand

evaluation structure contained two factors. The former was, henceforth, labeled as affective brand evaluation whereas the latter was labeled as usefulness of brand evaluation. The items remaining in the informativeness factor were: preciseness of advertisement, amount of information obtained from the advertisement and perceived informativeness of the advertisement. Moreover, of the seven confidence measures, five remained in the model. Finally, the model contained all three measures of purchase intention: Willingness to purchase, likelihood of purchasing and consider purchasing the brand.

It may be noted that the five factor model resulted in elimination of four of the twenty one items for the four dependent variables. That is, the five factor model retained more items in the model than the four factor model. Further, the five factor model clearly distinguished the affective brand evaluation from the usefulness of brand evaluation. Thus, the five factor model was judged superior to the four factor model.¹⁰ Therefore, further analysis of data was conducted with informativeness of advertisement, affective brand evaluation, usefulness of brand evaluation, confidence in evaluation and purchase intention as dependent variables.

¹⁰ It may be noted that M_8 fits better than M_{13} , although that is due to the fact that M_8 has one less variable than M_{13} . Correspondingly, the degrees of freedom for M_8 are fewer than those for M_{13} . Therefore, the test statistics χ^2 , AGFI and RMR are relatively better for M_8 than for M_{13} . Further, the fit index, to compare each model with the null model is also better for M_8 than for M_{13} because of fewer degrees of freedom associated with M_8 .

**The vita has been removed from
the scanned document**