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**THE EFFECTS OF COMPARATIVE ADVERTISING FORMAT ON
CONSUMER RESPONSES: THE MODERATING EFFECTS OF BRAND
IMAGE AND ATTRIBUTE RELEVANCE**

A Dissertation

**Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy**

in

The Interdepartmental Program in Business Administration (Marketing)

by

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To the memory of my beloved mother and father,

Your light will always guide me.

May 2000, Baton Rouge

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ABSTRACT

Comparative advertising has become a popular and powerful promotion tactic for companies competing in a highly competitive marketplace. While most research examined comparison advertisements focusing on one brand being compared to a competitor brand, “within-brand comparison” advertising has been neglected. Within-brand comparison advertising compares the attributes of an extension brand with the attributes of an original or replaced brand.

This dissertation examines the relative effectiveness of two forms of comparative advertising tactics, “within-brand comparison” versus “across-brand comparison. The moderating effects of “brand image” and “attribute relevance” and the mediating effect of “ad believability” are also assessed by an experiment.

Based on the Persuasion Knowledge Model and the Characterization-Correction Model, the results revealed that across-brand comparison ads resulted in lower ad believability, attitude toward the ad, attitude toward the brand, purchase intention, and more counterarguments and tactics-related cognitions than within-brand comparison ads under low brand image and attribute irrelevance conditions. Interaction effects were assessed under the conditions of high brand image and attribute relevance. The findings implied that high-image brands enjoy the flexibility of using both types of comparative ads as long as they are employing relevant attributes. On the other hand, low-image brands are more likely to benefit from only within-brand comparison ads employing relevant attributes. It was also found that the within-brand comparison ads resulted in more favorable consumer responses than the across-brand comparison ads irrespective of attribute relevance. However, the results also suggest that low-image brands should

prefer within-brand comparison ads to across-brand comparison ads and avoid using irrelevant attributes.

Overall, within-brand comparison ads seem to result in more favorable outcomes than across-brand comparison ads while avoiding the potential risks of legal problems, competitor retaliations, and brand confusion.

CHAPTER 1: DISSERTATION OVERVIEW

Introduction

Since the early 1970s, comparative advertising (CA) has become a popular and powerful promotion tactic for companies competing in a highly competitive marketplace. Estimates suggest that about 30 percent to 40 percent of all advertisements in the US are comparative (Donthu 1998). The main reason for the increased popularity of CA stems from the FTC's informal encouragement of explicit comparisons in the 1970s (Grewal et al. 1997; Tannenbaum 1974; Wilkie and Farris 1975). Another reason for its increased popularity is advertisers' belief in the effectiveness of CA in consumer decision making. Barry (1993) indicated that the main premise behind this popularity is that consumers find comparative advertisements both informative and interesting.

In a recent meta-analysis, Grewal et al. (1997) reported that the effectiveness of CA is "equivocal." A primary reason for these mixed results is that "the complexity of CA and advertising response makes it difficult to assess the effectiveness of CA outside of some usage context" (Rogers and Williams 1989). In this respect, the primary goal of this dissertation is to examine the effect of CA in the context of the comparison brand (brand which the ad sponsor compares to itself), attribute relevance and image of the advertising brand. These variables have been neglected in previous research. This research will also examine the potential effect of "ad believability" as a mediator of comparative advertising on consumers' cognitions, attitudes, and behavioral intentions.

In previous studies, usually one brand has been compared to a competitor brand explicitly or implicitly on certain attributes (i.e., "Tylenol" vs. "Advil" or "other brand"

on faster pain relief). However, there is also a wide use of "within-brand comparison" advertising where attributes of an extension brand (i.e., "Extra Strength Tylenol") are compared with attributes of an original (i.e., "Regular Strength Tylenol") or replaced brand. "Within-brand comparison" (WBC) is a common advertising practice that firms use when they are introducing a new (innovative) product to market (King 1990). While WBC is used extensively by practitioners, it has not received much research attention from academicians.

Existing research suggests that effectiveness of comparative advertising may be moderated by relative market position (e.g., market share) of sponsor and comparison brands. Findings indicate that low-share brands (followers) are more likely to benefit from comparative advertising than high-share brands (leaders) (Pechmann and Stewart 1990; Grewal et al. 1997). Pechmann and Stewart (1990) mention that comparison of a low-share brand to a high-share brand might be advantageous for the low-share brand. While this finding is interesting and may have important implications, there are instances of two low-share brands (i.e., Lexus vs. Mercedes) or two high-share brands (i.e., Children's Tylenol vs. Children's Motrin) being compared with each other. Clearly, in both instances, the comparisons are not a function of market share, but that of brand image. In addition, there seems to be an inherent problem associated with using market share to judge the effectiveness of comparative ads. Market share information is easy to obtain but difficult to interpret. Aaker (1996a) indicates that:

"There are, however, measurement problems with market share. The product class and competitor set need to be defined, and sometimes this is not easy to do. Should store brands be included? What about brands at a different price point? Is the relevant competitor set compact cars, non-luxury cars, import cars, or all cars? Should Miller Lite be compared to all beers, all premium

beers, or all light beers? Further, the relevant competitor set can change, creating interpretation problems (p. 332)."

Given the difficulties associated with the interpretation of market share, the current dissertation reexamines the effectiveness of CA within the context of brand image (BI). This dissertation proposes that consumers' beliefs about the reputation of a brand (i.e., BI) may influence the effectiveness of CA. That is, the effectiveness of "Across" versus "Within" brand comparison will depend on the image of the advertised brand. In this dissertation, brand image is defined as "perceptions about a brand as reflected by the brand associations held in consumer memory (Keller 1993, p. 3)."

Previous research has examined the moderating effect of "message content" of the ads. It was found that the credibility of comparative advertising might be enhanced by including factual information rather than evaluative information (Grewal et al. 1997; Iyer 1988; Edell and Staelin 1983). Factual information is information that is objective, while evaluative information is subjective in nature (Grewal et al. 1997). Factual information in an ad is perceived to be more informative than evaluative information. However, Grewal et al. (1997) found that CA evaluative information is more effective in influencing consumers' attitudes than factual information while factual information is more effective in enhancing purchase intention.

An interesting question is what happens when information presented in an ad is objective (or factual), but irrelevant for decision-making purposes. Procter and Gamble's differentiation of instant Folger's coffee by its "flaked coffee crystals" (having greater surface area) provides objective information. However, how relevant is it for consumers in their information processing and decision making? Therefore, "attribute relevance" might be an important factor influencing the effectiveness of comparative

advertising. Similar to brand image, "attribute relevance" has not been contemplated as a variable that may moderate the effectiveness of comparative advertising in previous studies. Two recent studies by Carpenter, Glazer, and Nakamoto (1994), and Kalra and Goodstein (1998) have examined the effect of attribute relevance on product differentiation. While finding contradictory results, experiments conducted in these studies were not in the context of comparative advertising.

This dissertation will first contribute to the advancement of comparative advertising literature by examining the relative effectiveness of two forms of CA tactics, "Within-Brand Comparison" (WBC) versus "Across-Brand Comparison" (ABC). Second, this dissertation will provide a better understanding of the effects of CA by including two factors that have not been examined before, namely attribute relevance and brand image. Use of "Brand Image" instead of "Market Share" and "Attribute Relevance" instead of "Message Content" as variables that moderate the effectiveness of CA will provide a different perspective which may prove to be more appropriate in different advertising conditions, such as a low-image and low-share brand compared to a high-image and low-share brand or a new product compared to a high-image and high-share brand. Establishment of the moderating effects of attribute relevance and brand image will be a theoretical contribution as well as providing valuable implications for the practitioners. Finally, "ad believability" will be examined as a variable that mediates the relationship between the independent variables and consumers' cognitive responses. The hypotheses that are proposed later will be tested by an experiment (3x2x2 between-subjects design).

CHAPTER 2: LITERATURE REVIEW

Comparative advertising is defined as "ads that explicitly or implicitly compare at least two brands in the same generic product or service class on specific product/service attributes" (Grewal et al. 1997)¹. Comparative advertisements are typically categorized with respect to the degree to which the competitor is identified (intensity) and the direction in which the comparison is made (associative vs. differentiative) (James and Hensel 1991; Lamb, Pride, and Pletcher 1978). In terms of "intensity," comparative ads **explicitly** or **implicitly** compare at least two brands in the same generic product or service class and compare the brands on specific product/service attributes (Grewal et al. 1997; Jackson, Brown, and Harmon 1979; Wilkie and Farris 1975). Comparative advertisements that identify the compared brand are called "explicit or direct" CAs (Barry 1993; Pechmann and Stewart 1991; Wilkie and Farris 1975). Comparative advertisements that do not identify the compared brand are called "implied or indirect" CAs (Barry 1993; Gnepa 1993; McDougall 1977; Shimp 1975; Wilson 1976). However, an explicit CA is not interpreted as an advertisement

¹ *Comparative versus Negative and Attack Advertising:* Although it is difficult to distinguish comparative advertising from negative advertising, the primary goal of negative advertising is to impute inferiority about a competitor's brand. In negative advertising the intent is to damage the image or reputation of the competition (James and Hensel 1991; Merritt 1984). Comparative advertising, by contrast, identifies the competition for the purpose of claiming superiority or enhancing perceptions of the sponsor's brand (James and Hensel 1991; Prasad 1976). In other words, negative advertising is limited to comparative advertising in which a differentiative technique is employed (James and Hensel 1991). Moreover, in order for an advertisement to be classified as a negative advertisement, consumers should perceive an ad to be malicious in some way, or "**hitting below the belt**" by violating preconceived standards of fair play in a malicious or vicious personal manner. Finally, even though attack advertising and negative advertising often are used interchangeably, attack advertising also represents the most malicious form of negative advertising (Pinkleton 1997). Attack advertising contains an aggressive, one-sided assault, designed to draw attention to an opponent's weaknesses in either character or issue positions (within the political framework).

that compares a new product to an old one. Definitionally, it is a comparison of a brand to at least one of its competitors (either explicitly or implicitly).

In terms of the "direction," comparative ads are either **associative** or **differentiative**. Associative comparative ads emphasize similarities among the advertised and comparison brands, while differentiative comparative ads focus on the advertised brand's superiority (differences) over the comparison brand (Miniard et al. 1993). This dissertation offers a broadened definition of comparative advertising to include across-brand and within-brand comparison. A detailed discussion of across-brand and within-brand comparison is provided in the conceptual model section. Within the scope of this broader definition, the dissertation will focus only on the explicit/differentiative nature of comparison.

Theoretical Framework

Theory-driven research in the area of comparative advertising is virtually non-existent (James and Hensel 1991). Even though there is no unique theory of comparative advertising, past research shows that many theories have been borrowed and applied from other fields. This dissertation will utilize the conceptual underpinnings of five of these theories. Specifically, this dissertation will employ the Hierarchy of Effects Model (HEM), Cognitive Response Theory (CRT), Persuasion Knowledge Model (PKM), Characterization-Correction Model (CCM), and Economics of Information Theory to examine the relationships among the type of comparative ad (ad format), brand image, and attribute relevance and the effect of these variables on certain cognitive response variables, attitude toward the ad (A_{Ad}), attitude toward the

brand (A_{Br}), search intention (SI), and purchase intention (PI). In the following sections, these theories and models are briefly explained.

Hierarchy of Effects Model

Hierarchy of Effects Model (Lavidge and Steiner 1961) is used to classify many dependent variables of advertising literature into meaningful effect categories. Most studies on comparative advertising focused on effectiveness of comparative advertising over noncomparative advertising on some cognitive, affective, and conative variables. According to Lavidge and Steiner (1961), the objectives of advertising can be separated into three main functions: cognitive, affective, and conative. Cognitive function includes the effects of advertising on attention, awareness (message recall, brand recall), processing, informativeness, similarity, and believability (message, source). Affective function includes effects on attitude toward the ad and attitude toward the brand. Finally, conative function includes effects on intentions and behavior.

Cognitive Response Theory (CRT)

Cognitive response theory (CRT) assumes that individuals attempt to integrate persuasive communication with their present knowledge base about a specific topic (Wright 1973). According to CRT, essentially reactions, thoughts, and ideas generated by exposure to a message mediate persuasion. Within the CRT framework, persuasion takes place when consumers develop more support arguments than counterarguments and fewer challenges to the credibility of source (i.e., fewer source derogations). Droge (1989) found that comparative advertising is processed cognitively via the central route and, therefore, message related responses are likely to be better predictors of attitudes than source related responses.

Persuasion Knowledge Model (PKM)

Persuasion Knowledge Model (PKM) presumes that people's persuasion knowledge is developmentally contingent (Friestad and Wright 1994). Consumers develop knowledge about various advertising tactics such as the use of negatively framed claims, fear appeals, and so forth, and about how to respond to these tactics (Shiv et al. 1997). According to PKM, knowledge about persuasion, the marketer, and the topic of the persuasion attempt, play a critical role in determining the effects of advertising on consumers' attitudes and behavior. This knowledge continues developing throughout the life span (Friestad and Wright 1994).

According to the PKM, consumers assess the perceived effectiveness and perceived appropriateness of the persuasion tactic. Perceived appropriateness is whether consumers judge the tactic to be moral/normatively acceptable or not (i.e., within the boundaries of the "rules of the game") (Friestad and Wright 1994). These judgments such as fairness and manipulateness of persuasive tactics influence the coping behavior of consumers. In their PKM, Friestad and Wright (1994) argued that since the existence of CA, consumers first gained awareness of this advertising tactic and then tried to distinguish and interpret the reasons behind its use. As consumers learned about CA, their coping behavior has also changed. This coping behavior determines whether consumers believe (perceived truthfulness) or do not believe the ad claims. This change in the level of awareness and knowledge of persuasion attempts of advertisers may also affect the behavioral responses of consumers.

Characterization-Correction Model (CCM)

The CCM posits that there is a two-stage process that people engage in when exposed to information. According to this model, incoming information has a potential of being discounted. The characterization stage is the initial acceptance stage of incoming information. The CCM (Gilbert 1989) suggests that when the extent of processing is low, claims-related cognitions are likely to dominate preferences. The correction stage is the second stage in which information is elaborately processed. Only when the processing is more elaborate, tactics-related cognitions (potentially responsible for the claims being discounted) are likely to impact preferences (Shiv et al. 1997). For example, the effectiveness of negative framing is likely to be lower than that of positive framing when the consumers' processing is elaborate rather than impoverished and they perceive the ad tactic to be unfair. In the context of comparative advertisements, consumers' intensity of information processing and therefore, the probability of entering the correction stage may be influenced by the type of sponsor brand and/or the information content of the ad. Consequently, in these situations consumers are likely to discount the advertised claims leading to lower effectiveness.

Economics of Information

According to the Economics of Information theory (Stigler 1961), consumers will engage in acquiring and processing information so long as the costs of additional acquisition and processing do not outweigh the additional benefits. However, this information search may differ among consumers. This difference is due to their expenditure level on a commodity, the costs of search, or the perceived benefits.

Advertising is a major instrument that provides valuable information that enables consumers to reduce the cost of search and to learn about alternative products. In addition, "the advertised information has an important influence on consumers' responses to the ad and the brand" (Abernethy and Franke 1996). Comparative advertising enables consumers to lower their search costs and to compare different brands based on their claims. Interestingly, even irrelevant information helps consumers determine how much time to spend on search (Carpenter et al 1994). Generally, however, when information is available and correct, consumers will be able to find better deals. Conversely, people may make poor consumer choices when "information is not available at low enough costs or in desired amounts and formats" (Bloom 1989).

Findings

Within the framework of the HEM, three other theories (the PKM, the CCM, and the Economics of Information) can explain the consumers' information processing and decision-making when exposed to the persuasion attempts of comparative advertising. The PKM, the CCM, and the Economics of Information Theory can illustrate how CA affects consumers which in turn affect their attitudes and behavioral intentions. Integration of these theories under one framework provides better explanation of consumers' responses to persuasion tactics such as their cognitive perceptions (e.g., counterarguments), attitudes, and intentions (e.g., search for additional information or purchase intentions). The PKM and the CCM explains why consumers might have different levels of elaboration and the Economics of Information Theory can explain why consumers might search for additional information.

Comparative Advertising and Cognition

Consumers attend to comparative ads more than noncomparative ads when the information presented in CAs is perceived to be unique and useful (Grewal et al. 1997; Muehling, Stoltman, and Grossbart 1990). According to indexing process theory, use of a comparison brand provides an index that raises the attention paid to the entire advertisement (Donthu 1998; Grewal et al. 1997; Pechmann and Stewart 1990; Prasad 1976). When the attention paid to the ad is high, consumers are more likely to have increased awareness of the message, which leads to an increased recall of the messages and the sponsor's brand name in comparative ads than in noncomparative ads. Droge (1989) demonstrated that comparative ads are more likely to be processed centrally while noncomparative ads are more commonly processed peripherally. She argued that comparative ads induced greater mental activity and stimulated more thoughts (elaborate processing).

While there are findings that comparative advertising is perceived to be more informative than noncomparative advertising (Goodwin and Etgar 1980; Iyer 1988; Wilkie and Farris 1975), Grewal et al. (1997) found only marginal support for the effect on perceived informativeness in their meta-analysis. However, Grewal et al.'s findings indicate that comparative advertising is perceived to be as informative as noncomparative advertising. Finally, while Wilkie and Farris (1975) indicated that comparative ads are more believable (source and message) than noncomparative ads, Swinyard (1981) reports opposite findings. Grewal et al. (1997), however, found that comparative ads have less source credibility while there was no significant difference for message credibility.

Comparative Advertising and Affect

According to Grewal et al. (1997), the ad format should directly and indirectly influence affective responses through the cognitive variables. Findings indicate that consumers perceive comparative ads to be impersonal, less friendly and pleasant, less believable and honest, and more aggressive and intense (Droge 1989). Consequently, consumers have less positive attitudes toward comparative ads than noncomparative ads (Gorn and Weinberg 1984; Swinyard 1981). However, Muehling (1987) and Grewal et al. (1997) report that comparative ads create more positive A_{Br} than noncomparative ads. This differential effect on A_{Ad} and A_{Br} is supported by Droge's (1989) finding that A_{Ad} may predict A_{Br} for noncomparative ads but not for comparative ads.

Comparative Advertising and Conation

The final and most important function of advertising is to convince consumers to purchase the advertised brand. Whether advertising is successful in terms of creating actual purchases is measured either by "purchase intention" or by "actual purchase behavior." While Swinyard (1981) did not find any significant difference between comparative advertising and noncomparative advertising with respect to their effectiveness on purchase intention, Droge (1989) and Grewal et al. (1997) concluded the opposite. Grewal et al. found that consumers' purchase intentions and actual purchase behavior are more positive when the ad is comparative than when it is noncomparative.

Moderating Effects on Comparative Advertising

Prior research has examined the moderating effects of relative market position, ad credibility, and message content on the effectiveness of comparative advertising.

Pechmann and Stewart (1991) examined the moderating effect of market position of advertised brand. They found that a comparative advertisement is more effective when a low-share brand is compared to a high-share brand than when it is compared to a moderate- or low-share brand. This effect was due to increased attention of consumers and elevation of low-brand's image when compared with a high-share brand. Pechmann and Stewart's results showed that a direct comparison ad is the most effective for low-share brands, indirect comparison ad is for moderate-share brands, and noncomparative ad is for high-share brands. Additionally, Grewal et al. (1997) found that comparative ads generate more positive consumer attitudes toward the sponsored brand than noncomparative ads when the sponsored brand is new to the product category. However, noncomparative ads are more appropriate for market leaders. They also found that comparative ads create higher purchase intentions and more positive attitudes toward the sponsored brand when the sponsored brand's market share is less than the comparison brand.

In a similar study, Gnepa (1993) examined whether industry-growth rate influenced the frequency of execution of comparative advertising and whether comparative ads are used more by low-share brands. Findings indicated low industry-growth rate led to more aggressiveness. However, once the growth rate improved, then the frequency of comparative advertising declined. Gnepa also found that with few exceptions, comparative advertising was generally used by low-share brands.

Source credibility is a moderator that influences the effectiveness of comparative advertising. Counterargumentation and source derogation significantly decreases when credibility of comparative ads is enhanced, in turn increasing their

persuasiveness. Grewal et al. (1997) found that consumers have higher purchase intentions and more positive attitudes toward the sponsored brand when the credibility of a comparative ad is higher. Gotlieb and Sarel (1991) also analyzed the interaction of source credibility and ad format. Their results showed that comparative advertising is more persuasive and effective in enhancing purchase intention than noncomparative advertising when higher construction-motivated involvement is activated and a source of higher credibility is included in the ad.

The moderating effect of message content also has been examined by researchers. The presence of factual information was found to enhance the effectiveness of comparative advertising (Edell and Staelin 1983; Iyer 1988). Consumers perceive factual information more informative than evaluative information and therefore generate fewer counterarguments and source derogations. Consumers tend to have more positive attitudes toward the sponsored brand. However, Grewal et al.'s (1997) findings are contrary to this. They found that when a comparative ad contained evaluative information, then its effect on consumers' attitudes was higher than a comparative ad that contained factual information. On the other hand, when a comparative ad contained factual information, its effect on consumers' purchase intentions was higher than a comparative ad that contained evaluative information.

In addition to the moderating effects of brand or message related factors, there is evidence that methodological and consumer factors may moderate the effectiveness of CA. Miniard et al. (1993) and Rose et al. (1993) examined whether measurement scales had an impact on the findings related to the effectiveness of comparative advertising. Miniard et al. found that relative scales generated larger effects than absolute scale in

measuring the effect of comparative advertising on consumers' attitudes and purchase intentions. However, they warned that the relative measures are biased against noncomparative ads and may exaggerate the superiority of the comparative ads. Rose et al. demonstrated that differentiative relative measures are most sensitive to persuasion generated by differentiative comparative ads, and associative relative measures are more effective for capturing the effect of associative comparative ads.

In a recent exploratory study, Donthu (1998) investigated whether cross-country differences influenced the effectiveness of comparative advertising on consumers' attention and attitudes. Respondents were gathered from countries with different levels of exposure to comparative advertising (USA, Canada, Great Britain, and India). Findings revealed that consumers recalled comparative ads more than noncomparative ads, while respondents' country of origin had no effect on recall. In general, comparative advertising generated more negative attitudes toward the ad for all respondents. However, the level of negativity was higher for the respondents in countries where comparative ads are not widely used.

This literature review demonstrates that comparative advertising is an effective advertising strategy for low-share brands in influencing consumers' attitudes and behavioral intentions. At a minimum, comparative advertising is as effective as noncomparative advertising. Generally, comparative ads are more effective in generating more attention and awareness, more favorable brand attitudes, increased intentions and purchase behavior. The negative consequences of comparative advertising are lower believability and less positive attitudes toward the ad. However,

when these negative consequences are compared to positive outcomes, it is obvious that comparative advertising can be an effective tool in influencing consumers' behavior.

Conceptual Model

Figure 1 represents the framework of this dissertation. Based on the Hierarchy of Effects Model (Lavidge and Steiner 1961), this model proposes that ad format (WBC vs. ABC), attribute relevance (relevant vs. irrelevant), and brand image (high-image brand vs. low-image brand) are antecedents of ad believability, cognitive responses, attitude toward the advertisement (A_{Ad}), and attitude toward the brand (A_{Br}). These antecedent variables are defined next followed by an overall description of the model.

Figure 2.1
Model

Ad Format

As previously mentioned, comparative advertising is a common advertising practice that compares at least two brands explicitly or implicitly in the same generic product or service class on specific attributes (Grewal et al. 1997). While this general definition of CA is widely accepted, it does not include comparison of two products with the same brand name in the same category. Within-brand comparison, a

comparison of a new product to an old product with the same name, is a common advertising tactic and can be considered as a distinct form of comparative advertising.

The purpose of WBC is to differentiate the new product from the old one on certain attributes (to show the improvements) while trying to maintain (or transfer) the image associated with the original brand name. ABC, on the other hand, involves either association (to elevate the image of the advertised brand) or differentiation (to promote a superior attribute) of a brand from the competition.

Prior research indicates that consumers perceive CAs to be more informative, but less friendly and believable (Droge 1989; Muehling et al. 1990). This is based on the findings of research that employed across-brand comparisons. However, consumers' cognitive, affective, and behavioral responses may be different when they are exposed to a WBC ad. This model proposes that believability of the ad will be affected by the ad format but primarily through its interaction with brand image and attribute relevance, the two variables discussed below.

Brand Image

Keller (1993) mentioned that while brand image is an important concept in marketing, it has been difficult to define appropriately. However, while Keller's definition that was mentioned before is slightly different, Kirmani and Zeithaml (1993) also define brand image in terms of consumer perceptions. According to Kirmani and Zeithaml (1993) "brand image is the perceptual concept of a brand that is held by the consumer (p. 143)." The main purpose of brands and brand names is to provide for the consumer a symbolic meaning that assists the consumer in the recognition and decision-making process. Brands often develop a personality of their own that has an effect on

whether consumers decide the product's image is consistent with their needs (Herbig and Milewicz 1995). In this respect, the power of image for a brand is strongest when the competitive products all look alike. Aaker (1996a) indicated that the key associations/differentiation component of brand equity usually involves image dimensions that are unique to a product class or to a brand. Additionally, Lassar et al. (1995) suggested that image of a brand is based on its performance evaluation.

Brand image is a broad term that includes brand personality as well as the attributes and benefits or consequences that the consumer associates with the brand (Batra, Lehmann, and Singh 1993). Kirmani and Zeithaml (1993) mention that there are multiple inputs to brand image such as perceived quality, brand attitudes, perceived value, feelings, brand associations, and attitude toward the ad. For Keller (1993), brand image is one of the two dimensions of brand equity. The other dimension is brand awareness composed of brand recall and recognition. Keller (1993) mentions that brand associations that reflect consumers' perceptions about a brand are classified into three categories: attributes, benefits, and attitudes. There are three types of benefits that consumers can attach to product-related attributes or non-product-related attributes. These are functional, experiential, and symbolic benefits. Functional benefits are related to product-related attributes that satisfy basic (e.g., physiological and safety) needs (Keller 1993). Experiential benefits are related to product-related attributes that satisfy emotional needs. On the other hand, symbolic benefits are related to non-product-related attributes that satisfy needs such as outer-directed self-esteem and social approval (Keller 1993). Finally, these benefits determine the attitudes of consumers toward the brand.

In this dissertation, brand image will be operationalized as a variable that includes perceived quality, esteem, and personality dimensions. Perceived quality is the customer's judgment of the overall excellence or superiority of a brand (with respect to its intended purpose) relative to alternative brand(s) (Netemeyer et al. 1998). Perceived quality refers to the beliefs about relative performance of a brand. Also, perceived quality is a concept that is applicable across product classes (Aaker 1996b). Esteem is the degree to which the brand is held in high regard, is trusted by, and respected by its customers, relative to other brands in its class/product category (Netemeyer et al. 1998). Personality is defined as the degree to which the brand is perceived as having a strong personality in terms of its image, heritage, historical consistency, and the degree to which the brand evokes an image of its users (Aaker 1996b). This is based on a perspective that associates human characteristics with the brand (Netemeyer et al. 1998). In this respect, the brand image measure that will be used in this dissertation includes consumers' perceptions about brand's product-related and non-product-related attributes that correspond to functional, experiential, and symbolic benefits.

Brand image may influence consumers' perception of believability of the two different ad formats (WBC vs. ABC). Based on the brand image, if consumers perceive the CA to be less believable their cognitive responses will be affected. The rationale for the above possibilities will be offered in detail in the hypothesis section.

Attribute Relevance

Conventional product differentiation strategies prescribe that in order to differentiate a brand from its competitors, there has to be an attribute that is meaningful, relevant, and valuable to consumers (Carpenter, Glazer, and Nakamoto 1994).

According to Carpenter et al., (1994), brands can also be differentiated from their competitors on an attribute that is irrelevant to creating the implied benefit.

Consumers may mistakenly infer that an irrelevant attribute is valuable in their brand evaluations, because they cannot learn independently that the attribute is irrelevant and also avoid extensive cognitive effort. This also holds even for situations when the irrelevance of the information is revealed. However, an irrelevant attribute should be novel and unique in order to be considered valuable. Novel information is generally given more weight in judgments (Carpenter et al., 1994; Kahnemann 1973), especially for high price products. Additionally, uniqueness of information makes that information more salient (Carpenter et al., 1994). Carpenter et al., (1994) used "Informativeness Principle of Communications Theory" to explain how consumers assign a value to irrelevant information because of its uniqueness. Contrary to "Normative Theory" which argues that information would be discounted completely when its irrelevance is revealed, Carpenter et al., argue that irrelevant information would still be valued because of cognitive biases and perseverance (i.e., persistence of people in believing information even after it has been shown to be false or fabricated) effect. Therefore, presence of an irrelevant attribute can make brand choice decisions easier for consumers.

There are many examples of brands that differentiate themselves on the basis of irrelevant attributes in the marketplace (Kalra and Goodstein 1998). Carpenter et al., (1994) mention that irrelevant attributes may provide an economic benefit to the brand through higher profits with little or no investment in product improvement. On the other hand, competitors may also introduce irrelevant attributes that apply to their own

brands. Within the comparative advertising framework, it may be more reasonable to use irrelevant attributes against an original brand in a brand extension situation. Consumers are more likely to perceive an ABC using an irrelevant attribute to be less effective. This is likely because the CCM would suggest higher elaboration likelihood of ABC ads than WBC ads and consequently greater skepticism due to the presence of irrelevant attributes. Secondly, because of the potential for imitation possibility of irrelevant attributes by competitors, irrelevant attributes may be more effective under WBC condition than ABC condition. This is also consistent with the findings of Kalra and Goodstein (1998). Kalra and Goodstein (1998) did not find any evidence that meaningless differentiation increases brand equity. Their experiment required a high-involvement condition that led consumers to engage in greater message elaboration to understand the semantic and pragmatic meaning of advertised claims. However, Kalra and Goodstein (1998) argued that meaningless attributes might have an effect on brand equity when the level of elaboration is low.

Model Description

The model proposes that the effects of ad format, brand image, and attribute relevance on cognitive responses, A_{Ad} , and A_{Br} , will be mediated by "ad believability." As mentioned before, consumers develop beliefs about the appropriateness of specific types of ad tactics that are judged within the context of the persuasion topic and/or expected target audience (Friestad and Wright 1994, p.4). Based on the CCM, it is proposed that the type of comparative ad will interact with brand image and attribute relevance to influence ad believability. For example, consumers might perceive ABC ads by low-image brands as less believable than ABC ads by high-image brands.

Consequently, when a low-image brand uses an ABC ad, consumers might elicit more counterarguments or source derogations because of this lower believability. Therefore, based on the Characterization-Correction Model and Droge's (1989) findings, believability of the ad is expected to mediate the relationships between independent variables (ad format, attribute relevance, and brand image) and the cognitive response variables.

Cognitive responses that are thought to be elicited by the comparative ad are shown to affect A_{Ad} and A_{Br} . These cognitive responses are counterargumentation and tactics-related cognitions. A_{Ad} and A_{Br} are modeled as same level constructs. However, prior research suggests that A_{Ad} is a significant predictor of A_{Br} . According to Mittal (1990), A_{Ad} is a significant predictor of A_{Br} even after accounting for brand beliefs. Search intention (SI) and purchase intention (PI) are the final dependent variables predicted by A_{Br} . A_{Br} is conceptualized in this model as the key predictor of PI, which is consistent with other models of persuasion effects (Crowley and Hoyer 1994; MacKenzie, Lutz, and Belch 1986). Based on the Economics of Information theory (Stigler 1961), search intention is a construct that is affected by the information contained in the advertisement. Because of this, SI is conceptualized as being predicted by A_{Ad} and A_{Br} . If consumers consider the information believable, informative, or credible, then the level of their search intention for additional information may decrease. In other words, if consumers' A_{Ad} or A_{Br} are positive, then their search intention should be low.

Research Hypotheses

Effects of Ad Format (WBC vs. ABC)

According to the PKM, consumers try to cope with persuasion attempts by interpreting and analyzing them to understand whether they are effective and appropriate. Friestad and Wright (1994) argue that today's "consumers have learned how best to cope with CAs in general, or in particular situations" (p. 24). In other words, today's consumers have more persuasion knowledge because they have been exposed to several persuasion tactics for brands in almost all product and service categories. Therefore, consumers are better equipped to handle the incoming information and decide whether it is valuable. Most comparative advertisements (i.e., ABC ads) are so predictable because the sponsor brand is always presented to be more superior to the compared brand. Therefore, while consumers do not resist such a persuasion attempt, they may simply discount it. This may be due to the consumer's belief that some tactics (such as ABC) are used when marketers have nothing of substance to say about a product (Friestad and Wright 1994). However, when marketers use a WBC ad consumers may conclude that the tactic is believable.

In comparison with WBC ads, ABC ads may result in consumer attribution of lower credibility to the source and greater skepticism regarding the comparative ad claims. The consumer may, therefore, be more prone to counterargumentation (Putrevu and Lord 1994; Wilson and Muderrisoglu 1980), and generate negative tactics-related cognitions. Consequently, WBC ads are likely to result in more positive A_{Ad} and A_{Br} than ABC ads. Additional reasons for the relative ineffectiveness of ABC are the "Boomerang Effect" and the "Underdog Hypothesis." The "Boomerang Effect"

suggests that direct comparative advertising provides free exposure to the competing brand (Muehling 1987; Neese and Taylor 1994; Taylor and Cotter 1989; Wilkie and Farris 1975), whereas the "Underdog Hypothesis" posits that comparison with a different brand may be counterproductive in certain situations (Ash and Wee 1983; Gnepa 1993; Shimp 1990).

In the WBC condition, the advertiser tries to differentiate the extension brand/product by claiming an attribute that does not exist (or exists at an inferior level) in the original product. When the comparison is within the same brand name, credibility of the advertiser may not be questioned and consumers may conclude that the advertiser is telling the truth. Consequently, under the WBC condition, comparison of an old product's attributes with an improved product's attributes is less likely to increase consumers' motivation to counterargue and generate negative tactics-related cognitions. Therefore, consumers are more likely to infer that the extension product is really an improved version of the original product. Hence, it is hypothesized that:

H1: Compared to ABC ads, WBC ads will:

- a. be perceived as more believable**
- b. result in fewer counterarguments and**
- c. result in fewer negative tactics-related cognitions.**

H2: Compared to ABC ads, WBC ads will result in:

- a. higher attitude towards the ad (A_{Ad}) and**
- b. higher attitude toward the brand (A_{Br}).**

Economics of information theory posits that consumers will search additional information as long as benefits are greater than costs of obtaining information. As suggested by previous research, consumers viewing comparative advertising tend to be more skeptical about the claims compared to consumers viewing noncomparative

advertising. This skepticism may motivate consumers to search for additional information to either confirm or disconfirm the claims in the ABC condition ads. In the WBC condition, consumers will be less skeptical and more confident about the claims than in the ABC condition. Therefore, it is more likely for consumers under an ABC condition to search for additional information and express lower purchase intention.

H3: Compared to ABC ads, WBC ads will result in:

- a. lower search intention (SI) and**
- b. higher purchase intention (PI).**

Mediation Effects of Ad Believability

The characterization-correction model (CCM) argues that when consumers engage in low elaboration processing, they are more likely to accept the claims presented in the ad message. This is the initial characterization stage of the model. However, under certain circumstances (i.e., when the ad is perceived to be unbelievable or unfair), consumers are likely to be engaged in more elaborate processing of the claims. This higher level of elaboration causes consumers to enter the correction stage of the model in which they assess whether they should discount the value of the claims (Shiv et al., 1997).

As explained above, ad believability is more likely to be higher in the WBC condition than in the ABC condition. Based on the PKM and the CCM, higher level of believability will cause consumers to engage in low elaboration processing and therefore to accept the claims under WBC condition. Contrary to this, in the ABC condition, lower level of ad believability will cause consumers to engage in more elaborate processing and to enter the correction stage and discount the claims by counterarguing and developing negative tactics-related cognitions. Therefore:

H4: Ad believability will mediate the effect of independent variables on:
a. counterarguments, and
b. negative tactics-related cognitions.

Interaction Effects of Ad Format and Brand Image

According to Pechmann and Stewart (1990), comparing a low-share brand to a high-share brand may be advantageous for the low-share brand. While based on these findings, one may be tempted to argue that a low-image brand is likely to benefit by comparing itself to a high-image brand, it is proposed here that an ABC ad by a low-image brand is likely to result in consumer skepticism.

The PKM suggests that an ABC ad is likely to be discounted by consumers. It is posited that such discounting will be greater for low-image brands. Given that most brands are likely to use a higher image brand as a comparison standard, an ABC ad will be less believable when it is used by a low-image brand compared to a high-image brand due to the wider divergence in the comparative reference point. Therefore, use of an ABC ad by a low-image brand may prompt the consumer to enter the correction stage of the CCM and generate negative cognitive responses. Consequently, the use of an ABC ad by a low-image brand is likely to have a negative effect on A_{Ad} and A_{Br} . Conversely, consumers are expected to have more positive A_{Ad} and A_{Br} when ABC is used by a high-image brand.

WBC ads are likely to be perceived as equally believable for high- and low-image brands. Retaliation or prestige-seeking (Gnepa 1993) purposes are not likely to be reasons for a high-image brand using WBC ads. In addition, in the absence of a different comparison brand in a WBC ad, consumers' negative perceptions associated with across brand comparison are also likely to be absent (Droge 1989). However, in a

WBC ad for a high-image brand, the comparative reference point is high, and therefore the comparison is likely to result in positive cognitive and attitudinal responses. On the contrary, the comparative reference point in a WBC ad by a low-image brand is low, and therefore such comparison is not likely to benefit a low-image brand as much as a high-image brand.

Search and purchase intention will also be affected by brand image. Based on the Economics of Information Theory, consumers will search for information if they think that they can benefit from it. Under WBC condition, consumers will not suspect any misleading information for both high- and low-image brands. However, the high-image brand will benefit more than a low-image brand because the comparison brand or the reference point is more positive for high-image brands.

Based on the above discussion, it can be argued that consumers are most likely to enter the correction stage of the CCM in the instance of an ABC ad run by a low-image brand. Consequently, the negative effects of an ABC ad (versus a WBC ad) are likely to be magnified for low-image brands. Hence, based on the PKM, the CCM, and the above discussion, the following hypotheses are postulated:

H5: ABC ads will result in: (a) lower believability, (b) more counterarguments, and (c) more negative tactics-related cognitions, than WBC ads and the effect will be greater for low-image compared to high-image brands.

H6: ABC ads will result in: (a) lower attitude towards the ad (A_{Ad}), and (b) lower attitude toward the brand (A_{Br}), than WBC ads and the effect will be greater for low-image compared to high-image brands.

H7: ABC ads will result in: (a) higher search intention (SI), and (b) lower purchase intention (PI), than WBC ads and the effect will be greater for low-image compared to high-image brands.

Interaction Effects of Ad Format and Attribute Relevance

Relevance of attributes included in comparative ads may have an impact on consumers' perceptions of ad believability, A_{Ad} and A_{Br} (through A_{Ad}) by interacting with different ad formats. Such impact might also influence consumers' search and purchase intentions. Based on the PKM and the CCM, consumers are likely to process WBC ads less elaborately than ABC ads. As a result, consumers may simply accept the information without much counterargumentation when they are exposed to irrelevant attributes under the WBC condition. Because the elaboration likelihood is lower in WBC condition and also the sponsor brand is compared to the original brand, consumers may feel that there is no "wrong-doing" in including an irrelevant attribute. Therefore, they are not likely to enter the correction stage of the model in which they may discount the value of the received information by counterarguments or source derogations. This suggests that irrelevant attributes may work better for WBC ads than ABC ads.

Based on PKM and CCM, consumers are more likely to enter the correction stage and elaborate more in the ABC condition. Higher levels of elaboration may lead the consumers to assess the relevance of the claim by examining its value and diagnosticity. If consumers do not perceive an attribute to be valuable or diagnostic, it may result in skepticism regarding the ad and have little or no effect on decisions. Also, consumers will be more likely to look for further information from other sources to assess the value of an irrelevant attribute. If consumers perceive the attribute to be valuable or diagnostic, the previously mentioned negative effects may not be as strong. In the WBC condition, consumers are not likely to enter the correction stage of the

CCM, and therefore accept the claims based on relevant as well as irrelevant attributes.

Consequently, the following hypotheses are proposed:

H8: ABC ads will: (a) be perceived as less believable, (b) result in more counterarguments, and (c) result in more negative tactics-related cognitions, than WBC ads and the effect will be greater for irrelevant compared to relevant attributes.

H9: ABC ads will result in: (a) lower attitude towards the ad (A_{Ad}), and (b) lower attitude toward the brand (A_{Br}), than WBC ads and the effect will be greater for irrelevant compared to relevant attributes.

H10: ABC ads will result in: (a) higher search intention (SI), and (b) lower purchase intention (PI), than WBC ads and the effect will be greater for irrelevant compared to relevant attributes.

CHAPTER 3: PRETESTS AND PILOT STUDY

Three pretests were conducted prior to developing the ads used in this dissertation. The first pretest dealt with the selection of the product category to be used in the experiments. The second and third pretests were conducted to select the high, moderate and low image brands to be used in this dissertation. After selecting the product category, electronic and store based searches were conducted and sixteen brand names were identified. Because asking respondents to evaluate sixteen brands on three image dimensions with twelve measurement items could result in subject fatigue, pretest two was conducted to reduce the list of brands.

The third pretest was conducted to select the three brands used in this dissertation. The third pretest was also used to select the relevant and irrelevant attributes used in the advertisements. A pilot study was then conducted to test the hypotheses proposed in this dissertation prior to the main study. Finally, based on the findings of the pilot study, a fourth pretest was conducted to assess consumers' expectations about comparison brands that can be used by advertised brands.

Pretest One

Pretest Method

Pretest one involved two steps. The first step was conducted to measure consumers' familiarity with various product categories and the importance of making a right choice while buying from those product categories. Respondents were also asked if comparative advertising was common in those product categories. Selection of a product category with which subjects are familiar was important for ecological validity and generalizability of the findings. Additionally, it was important to select a product

category for which respondents feel making the right choice is important. The importance of making the right choice is likely to motivate the respondents to elaborate on the information they receive from the ad message. Finally, it was important for ecological validity to ensure the use of comparative ads were prevalent for the selected product category.

Because the subject pool to be used in the main study will consist of students, twelve different product categories relevant to students were selected and presented to the subjects of pretest one. Forty-one subjects responded to the questionnaire of which six were unusable for analysis due to the inconsistencies detected in the responses. The questionnaire used in pretest one is presented in Appendix A.

Familiarity and commonality perceptions of comparative advertising were measured by one indicator each on a seven-point Likert scale anchored by "strongly disagree" to "strongly agree." Importance of a right choice was again measured by one indicator anchored by "not at all important" to "extremely important" on a seven-point Likert scale.

Pretest Analysis and Results

The results of the first pretest are presented in Tables 3.1, 3.2, and 3.3. The results indicated that respondents were familiar with all the selected product categories except cameras (mean=3.80, $t=-0.647$, sig.= 0.522). Athletic shoes was the product category that respondents were most familiar with (mean=6.00) followed by toothpaste (mean=5.91), TV's (mean=5.80), and PC's (mean=5.57). These results indicate that student respondents are more familiar with frequently purchased products (e.g., athletic

shoes and toothpaste) and relatively expensive items that they frequently use (e.g., TV's and PC's).

Table 3.1
Mean Scores for Familiarity

Familiarity with the Product Category (Test value=4.0)			
	Mean	t-value	Sig.
Ath. Shoe	6.00	12.196	0.000
Toothpaste	5.91	8.473	0.000
TV set	5.80	7.911	0.000
PC	5.57	8.120	0.000
Pain Reliever	5.54	6.618	0.000
Cordless Phone	5.40	4.971	0.000
Calculator	5.34	5.249	0.000
Home Stereo	5.23	4.463	0.000
VCR	5.20	4.583	0.000
Beer	4.83	2.113	0.042
Car Stereo	4.83	2.517	0.017
Camera	3.80	-0.647	0.522

Findings also indicate that respondents were indifferent about making the right choice for only two product categories, namely cameras (mean=4.49, $t=1.512$, sig.=0.140) and beer (mean=4.26, $t=0.629$, sig.=0.533). However, making the right choice for PC's (mean=6.34, $t=13.884$, sig.=0.000), pain reliever (mean=6.11, $t=11.599$, sig.=0.000), toothpaste (mean=6.06, $t=13.948$, sig.=0.000), and athletic shoes (mean=5.91, $t=8.925$, sig.=0.000) were important for student respondents. Findings about making the right choice were similar to the findings about familiarity. Making the right choice was most important for frequently purchased products followed by relatively expensive products (see Table 3.2).

Table 3.2
Mean Scores for Importance of Right Choice

Importance of Making the Right Choice (Test value=4.0)			
	Mean	t-value	Sig.
PC	6.34	13.884	0.000
Pain Reliever	6.11	11.599	0.000
Toothpaste	6.06	13.948	0.000
Ath. Shoe	5.91	8.925	0.000
TV set	5.83	11.335	0.000
Home Stereo	5.71	6.565	0.000
Car Stereo	5.69	5.660	0.000
Cordless Phone	5.57	6.965	0.000
VCR	5.57	6.965	0.000
Calculator	5.34	6.694	0.000
Camera	4.49	1.512	0.140
Beer	4.26	0.629	0.533

Respondents also indicated their responses to whether comparative advertising is a common advertising tactic in these twelve product categories (see Table 3.3). Results showed that comparative advertising is a common tactic for only four product categories namely pain relievers (mean=6.14, $t=10.033$, sig.=0.000), toothpaste (mean=5.11, $t=4.609$, sig.=0.000), PCs (mean=5.06, $t=3.578$, sig.=0.001), and TV's (mean=4.97, $t=3.125$, sig.=0.004).

Based on these findings, toothpaste was selected as a product category for use in the main study. The main reasons for choosing toothpaste were that it is a convenience product that is widely used, subjects were also highly familiar with the product, and right choice was important for the subjects. In addition, comparative advertising is a highly common tactic in the promotion of toothpastes (Droge 1989). Another concern that influenced product category selection was ecological validity with respect to the use of irrelevant attributes in advertisements. Toothpaste is a product that seems to

satisfy the ecological validity criterion. Many toothpaste brands in the market use irrelevant attributes such as "pump-package," "no sugar content," and "tube-winder," in their advertisements.

Table 3.3
Mean Scores for Commonality of CA

Commonality of Comparative Advertising (Test value=4.0)			
	Mean	t-value	Sig.
Pain Reliever	6.14	10.033	0.000
Toothpaste	5.11	4.609	0.000
PC	5.06	3.578	0.001
TV set	4.97	3.125	0.004
Ath. Shoe	4.54	1.796	0.081
Camera	4.09	0.367	0.716
VCR	4.03	0.096	0.924
Car Stereo	4.03	0.096	0.924
Home Stereo	4.00	0.000	1.000
Beer	3.86	-0.449	0.656
Cordless Phone	3.80	-0.678	0.502
Calculator	3.37	-2.012	0.052

The second part of pretest one involved measurements about believability, credibility, and trustworthiness of comparative advertisements. The main purpose behind this pretest was to check the basic assumptions related to consumer skepticism regarding comparative advertising. The sample consisted of 35 students. Approximately half of the subjects responded to the following statements measured by seven-point semantic differential scales: "Comparative advertisements comparing two different brands (e.g., Hitachi vs. Sharp) are often: Not Believable/Believable, Not Credible/Credible, and Not Trustworthy/Trustworthy;" "Comparative advertisements where a sponsoring high-image brand (e.g., SONY) compares itself to a high-image brand (e.g., Panasonic) are: Not Believable/Believable, Not Credible/Credible, and Not

Trustworthy/Trustworthy;" and "Comparative advertisements where a sponsoring low-image brand (e.g., Packard-Bell PC) compares itself to a high-image brand (e.g., Gateway PC) are: Not Believable/Believable, Not Credible/Credible, and Not Trustworthy/Trustworthy." Respondents in this group evaluated statements about ABC ads.

The second group of subjects responded to statements about WBC ads measured by seven-point semantic differential scales. These statements were "Comparative advertisements comparing two different products with the same brand name (e.g., SONY DVP C600D vs. SONY DVP S500D) are often: Not Believable/Believable, Not Credible/Credible, and Not Trustworthy/Trustworthy;" "Comparative advertisements where a high-image brand compares its two different models (e.g., Nikon Zoom800 vs. Nikon One Touch Zoom70) are: Not Believable/Believable, Not Credible/Credible, and Not Trustworthy/Trustworthy;" and "Comparative advertisements where a low-image brand compares its two different models (e.g., Vivitar PZ8000 vs. Vivitar PZ700) are: Not Believable/Believable, Not Credible/Credible, and Not Trustworthy/Trustworthy."

Analysis on believability, credibility, and trustworthiness of comparative advertising revealed that ABC ads resulted in more favorable thoughts for high-image brands compared to low-image brands while WBC ads resulted in more favorable thoughts for low-image brands than high-image brands. These findings are presented in Table.3.4. The results were promising because the expected interaction of ad format and brand image was confirmed by assumption checks.

As mentioned in the hypotheses section in the previous chapter, the PKM suggests that an ABC ad used by a low-image brand is likely to be discounted more

than an ABC ad used by a high-image brand. Because of the wider divergence in the comparative reference point, an ABC ad used by a low-image brand results in consumers questioning the believability, credibility, and trustworthiness of the ad. On the other hand, a WBC ad used by a low-image brand does not result in consumers' suspiciousness of believability, credibility, and trustworthiness of the ad.

Table 3.4
Means of Believability, Credibility, and Trustworthiness of Comparative Advertising

<i>n</i> =35	Believability	Credibility	Trustworthiness
ABC	4.44	4.81	4.19
WBC	4.58	4.63	4.53
ABCxHI	5.44	5.44	5.25
WBCxHI	5.05	4.84	4.89
ABCxLI	3.06	2.81	2.81
WBCxLI	4.05	4.16	4.00

Pretest Two

Pretest Method

After selection of toothpaste as the product category to be used in the main study, a search was conducted on the Internet and in a large supermarket to identify various brands of toothpaste. Sixteen brands of toothpaste were identified within the \$1 to \$3 price range.

The sixteen brand names were printed on small paper strips and ten randomly selected subjects ($n_{\text{Male}}=5$, $n_{\text{Female}}=5$) were asked to group these brands into three categories (high, moderate, and low) based on their perceived brand images. The subjects were presented with the brand names in random order. Subjects were provided with written names instead of being asked to recall the brand names because preliminary contacts with different subjects indicated that only the Colgate, Crest, and

Aquafresh brands were consistently mentioned. Respondents were unable to recall moderate- and low-image brands of toothpaste.

Pretest Analysis and Results

Pretest two showed that respondents consistently categorized certain brands of toothpaste into one of the three categories. Brands such as Colgate, Crest, Listerine, and Mentadent, were placed in high-image category while brands such as Aloe-Dent, Gleem, Pepsodent, Propolis, and Supersmile were placed in low-image category. Arm & Hammer, Close-Up, and Rembrandt were generally categorized as moderate-image brands. Results of the categorization are presented in Table 3.5.

Table 3.5
Frequency Distribution of Perceived Images of Toothpaste Brands

(n=10)	High Image	Moderate Image	Low Image
Aloe-Dent	1	1	8
Aquafresh	5	5	0
Arm & Hammer	3	5	2
Close-Up	1	7	2
Colgate	9	1	0
Crest	9	1	0
Gleem	1	1	8
Listerine	6	3	1
Mentadent	8	1	1
Pepsodent	0	3	7
Promise	0	3	7
Propolis	0	0	10
Rembrandt	4	6	0
Sunshine Brite	1	2	7
Supersmile	1	0	9
Ultrabrite	0	5	5

From this list of sixteen brands, seven brands were selected to be used in the third pretest. Colgate, Crest, and Mentadent were high-image, Arm & Hammer and Close-Up were moderate-image, and Gleem and Pepsodent were low-image brands that

were selected for further pretests. These seven brands were selected such that respondents consistently reported their familiarity with them. Respondents were unfamiliar with brands such as Propolis, Supersmile, and Aloe-Dent.

Pretest Three

Pretest Method

First, pretest three involved the measurement of image differences among seven toothpaste brands selected after the second pretest. These seven brands are Crest, Colgate, Mentadent, Arm & Hammer, Close-Up, Pepsodent, and Gleem. The first three brands were categorized as high-image brands in the second pretest while Arm & Hammer and Close-Up as moderate-image, and Pepsodent and Gleem as low-image toothpaste brands. Second, the third pretest was conducted to assess the respondents' perceptions of relevance of various attributes that toothpaste brands currently use to differentiate themselves from the competition.

A total of fifty-eight undergraduate and graduate (MBA) students participated in the third pretest. Respondents were asked to respond to an eight-page questionnaire consisting of statements measuring brand image, brand familiarity and knowledge, and attribute relevance. The questionnaire is presented in Appendix C. Brand image was measured by twelve indicators on a seven-point Likert scale anchored by "Strongly Disagree" to "Strongly Agree." Some of the statements were "Compared to other brands of toothpaste, _____ is of very high quality," and "Compared to other brands of toothpaste, _____ is a brand I respect."

Brand familiarity was measured by one-item on a seven-point likert scale read as "I am familiar with _____ brand of toothpaste." Similarly, brand knowledge was

measured by an item read as "I am knowledgeable about _____ brand of toothpaste. The questionnaire also included as one-item overall image measure which read as "I believe _____ brand of toothpaste has a "Low Image/High Image" on a seven-point Likert scale. In order to account for the potential order effect, brands were rotated in the questionnaire.

After responding to image measures for seven brands, subjects were asked to list the attributes of toothpaste that would be important in their purchase decisions. This task was done prior to assessment of the relevance of various listed attributes to identify the important attributes the subjects could report in a free recall situation. Following this task, they were asked to rate twenty-one attributes that were found in different brands of toothpaste on a seven-point Likert scale anchored by "Highly Irrelevant" to "Highly Relevant." These attributes were determined by searching the claims that brands make, searching the Internet, speaking with a dentist and consumers. Finally, subjects were asked to indicate the toothpaste brand they use.

Pretest Analysis and Results

Findings for the third pretest showed that Crest and Colgate are the most preferred brand among seven brands with 41.4 percent and 25.9 percent respondents reporting using these brands respectively. Preference for other brands ranged from 1.7 percent to 6.9 percent. It was also found that consumers were familiar with all brands except Pepsodent and Gleem. Familiarity with Pepsodent and Gleem was significantly lower than 4.0. Consumers' knowledge about the brands used in the pretest revealed the same results. Consumers' knowledge about Pepsodent and Gleem were again significantly lower than 4.0. These results are presented in Table 3.6 and 3.7.

Table 3.6
Familiarity of Consumers with Toothpaste Brands

(Test value=4.0)	Brand Familiarity (One-item)		
	Mean	t-value	sig.
Crest	6.34	20.075	0.000
Colgate	5.91	11.827	0.000
Mentadent	5.37	5.738	0.000
Arm & Hammer	4.93	3.907	0.000
Close-Up	4.86	3.611	0.001
Pepsodent	3.33	-2.471	0.016
Gleem	2.62	-5.820	0.000

Table 3.7
Knowledge of Consumers about Toothpaste Brands

(Test value=4.0)	Brand Knowledge (One-item)		
	Mean	t-value	sig.
Crest	6.09	15.165	0.000
Colgate	5.54	8.040	0.000
Mentadent	5.00	3.992	0.000
Arm & Hammer	4.60	2.662	0.010
Close-Up	4.61	2.589	0.012
Pepsodent	2.95	-4.145	0.000
Gleem	2.35	-7.956	0.000

Two different brand image measures were used in pretest three. One measure consisted of twelve items tapping the three dimensions of brand image (perceived quality, esteem and personality), and one item for overall brand image scale.

The twelve-item brand image scale proved not to be significantly different from an eight-item scale (perceived quality and esteem) in terms of its reliability. Brand image reliabilities ranged from 0.947 to 0.969 for the twelve-item scale and from 0.966 to 0.978 for the eight-item scale. Reliability measures of these scales are presented in Table 3.8. Additionally, factor analysis on the twelve-item scale showed that generally perceived quality and esteem dimensions of brand image loaded together on one factor while the personality dimension loaded on the second factor except for the Mentadent

brand which loaded on only one factor. Extracted variance for the first factor in the twelve-item scale ranged between 66.8 percent (Colgate) and 77.2 percent (Mentadent) while it ranged from 82.1 percent (Crest) to 88.8 percent (Close-Up) for the eight-item scale. Presence of a second factor (or personality dimension) did not increase the reliability scores of brand image (see Table 3.8). In this respect, it was decided to use the eight-item brand image scale consisting of perceived quality and esteem further in the study.

Table 3.8
Factor Analysis Results and Scale Reliability for Brand Image

	12-items			8-items	
	Extracted Variance (%)		Scale Reliability	Extracted Variance (%)	Scale Reliability
	Factor 1	Factor 2			
Crest	70.126	9.789	0.950	82.096	0.966
Colgate	66.791	12.770	0.947	83.008	0.970
Mentadent	77.206	0.000	0.969	82.292	0.969
Arm & Hammer	73.894	8.375	0.965	83.443	0.971
Close-Up	72.842	14.525	0.961	88.770	0.982
Pepsodent	74.254	10.988	0.967	84.962	0.974
Gleem	74.693	11.257	0.967	86.892	0.978

As mentioned before, there was one item to measure overall brand image in the questionnaire. Results revealed that the eight-item image scores and the one-item image scores for the analyzed brands were highly correlated (all significant) which also indicates that consumers' image perceptions are highly reliable. In this respect it is also possible to use a one-item brand image measure. These correlations are provided in Table 3.9.

Based on these two scales, consumers' perceptions of brand images for the seven brands were assessed. The results are presented in Table 3.10. These tables show that the order of the brands in terms of their images is exactly the same for either scale.

Further analysis indicates that Crest, Colgate, and Mentadent are brands that have high image while Arm & Hammer and Close-Up have moderate image. Although Arm & Hammer is significantly above the test value of 4, it can still be considered as a moderate image brand due to the relatively less significant difference from Mentadent (t-value=1.813, sig.=0.075 on eight -item scale).

Table 3.9
Correlations between One-Item and Eight-Item Brand Image Scales

Brand	Correlation
Crest	0.882
Colgate	0.755
Mentadent	0.948
Arm & Hammer	0.866
Close-Up	0.883
Pepsodent	0.865
Gleem	0.876

Table 3.10
Mean Scores for One-Item and Eight-Item Brand Image Scales

	Brand Image Eight-item Scale		
(Test-value=4.0)	Mean	t-value	sig.
Crest	6.24	18.482	0.000
Colgate	5.74	11.256	0.000
Mentadent	5.55	8.821	0.000
Arm & Hammer	4.91	4.598	0.007
Close-Up	4.39	1.655	0.103
Pepsodent	3.36	-2.802	0.007
Gleem	2.57	-7.632	0.000
	One-item Scale		
(Test-value=4.0)	Mean	t-value	sig.
Crest	5.97	15.173	0.000
Colgate	5.44	9.084	0.000
Mentadent	5.25	7.952	0.000
Arm & Hammer	4.64	3.559	0.001
Close-Up	3.85	-0.745	0.459
Pepsodent	3.30	-3.679	0.001
Gleem	2.90	-6.482	0.000

Overall, Pepsodent and Gleem were found to be low-image brands which were significantly lower than 4. As seen in Table 3.10, Close-Up was not significantly different from the test value which shows that it is a genuine example of a moderate image brand.

Table 3.11
Mean Scores for Relevance of Toothpaste Attributes

(Test-value=4.0)	Mean	t-value	sig.
Fluoride content	6.28	13.527	0.000
Abrasiveness (tartar removal)	6.19	14.173	0.000
Anti-bacterial action	5.57	8.030	0.000
Bad-Breath action	6.22	14.857	0.000
Plaque removal action	6.47	21.267	0.000
Whitening action	6.14	13.839	0.000
Polishing action	5.58	9.858	0.000
Refreshing action	5.79	11.066	0.000
Effectiveness for Sensitive Teeth	4.52	1.994	0.051
Peroxide content	4.48	2.164	0.035
Baking Soda content	4.54	2.382	0.021
Foaming agent content	3.66	-1.473	0.146
Chemical ingredient content	3.36	-2.802	0.007
Herbal ingredient content	2.66	-6.419	0.000
Color	3.09	-3.932	0.000
Flavor	5.74	9.414	0.000
Texture (gel vs. paste)	5.04	4.826	0.000
Absence of sugar	3.64	-1.334	0.187
ADA approval	5.64	6.880	0.000
Tube-winder	3.60	-1.531	0.131
Pump-package	3.29	-2.692	0.009

Finally, the relevance of twenty-one toothpaste attributes was analyzed. Table 3.11 presents the findings related to this analysis. For consumers, fluoride content, abrasiveness, plaque-removal action, whitening action, refreshing action, and ADA (American Dental Association) approval were some of the relevant attributes that toothpaste brands could claim. Contrarily, color, pump-package, herbal ingredient content, and chemical ingredient content, were the attributes that consumers perceived

as irrelevant (all of which are significantly lower than the cutoff point of 4). In this respect, any one of these attributes can be used to create an irrelevant attribute manipulation for the main study.

Pilot Study

Overview and Questionnaire Design

This dissertation includes one pilot study and one main study. While both studies will employ experimental designs, the pilot study was conducted to refine the manipulations and questionnaire used in the final experiment. The pilot study involved a 3 (Ad Format) x 2 (Brand Image) x 2 (Attribute Relevance) between-subjects experimental design (Figure 2). Three ad formats that were used in the study are: a.) a Within-Brand Comparison (WBC) ad, b.) an Across-Brand Comparison (ABC) ad, and c.) a Noncomparative ad (NCA). A WBC ad compared a new (innovation) product to an old (original) product that has the same brand name. An ABC ad compared the new product to a competitor's brand. A NCA ad was used as a control group and did not include a comparison brand. One high-image brand (Mentadent) and one low-image brand (Pepsodent) were chosen based on the pretest results. The comparison brands (Close Up) was also chosen based on the results of pretest three. Again, relevant (or irrelevant) attributes were determined by pretest three.

The questionnaire used in the pilot study consisted of measures of all the dependent variables, manipulation check questions, other relevant measures to be used as possible covariates (i.e., knowledge about the brand, familiarity with the brand, loyalty, and attitude toward advertising), and demographic questions. The pilot study

questionnaire is provided in Appendix D. Measures that were used in the questionnaire are discussed next.

Cognitive Responses

Cognitive responses were measured right after the respondents were exposed to ad excerpts. Similar to Shiv et al., (1997), subjects were instructed: "We are interested in knowing what was going through your mind as you were reading the ad excerpt. Please write down anything and everything you remember going through your mind when you were reading the ad excerpt." After reading this instruction, subjects wrote down the things that went through their minds in the section below the instruction. Following this process, subjects were prompted for additional thoughts by asking: "Can you think of anything else?"

In the pilot study, cognitive responses were coded by the researcher. These cognitive responses were divided into six categories: (1) positive thoughts about the advertised brand and its attributes (i.e., support arguments), (2) negative thoughts about the brand and its attributes (i.e., counterarguments), (3) thoughts about the ad excerpt (i.e., professional look of the ads), (4) negative thoughts about comparative advertising (i.e., tactics-related cognitions), (5) thoughts about ad believability, and (6) other thoughts. Among these six groups, two of them, namely negative thoughts about the brand and its attributes (counterarguments) and thoughts about comparative advertising (negative tactics-related cognitions) were of concern in further analysis. Although "thoughts about ad believability" was one of the dependent variables to be analyzed in the pilot study, it could not be examined because none of the respondents indicated either positive or negative concerns about the believability of the ad to which they were

exposed. Therefore, hypotheses regarding the thoughts about ad believability could not be analyzed. For the final study, it was decided to include a measurement scale to assess consumers' perceptions about believability of the ad.

Negative thoughts about the toothpaste and its attributes included responses such as, "No toothpaste helps whiten teeth," and "More herbal ingredient doesn't make better toothpaste." Thoughts about comparative advertising included statements such as, "I don't like comparisons," and "Why are they comparing their own brands?"

Attitude toward the Ad (A_{Ad})

Attitude toward the ad was measured by asking respondents to indicate their overall evaluation of the ad on four seven-point items anchored by "bad/good," "unappealing/appealing," "not likable/likable," and "not interesting/interesting." The first three items were also used by Shiv et al., (1997). Coefficient alpha for these four items was 0.93 (inter-item correlations ranging from 0.68 to 0.85). The results about reliability of dependent variables are summarized in Table 3.12.

Table 3.12
Reliability of Dependent Variables - Pilot Study

Dependent Variable	Coefficient Alpha for Pooled Data	Range of Alpha across cells
Attitude toward the Ad	0.93	0.81-0.97
Attitude toward the Brand	0.88	0.71-0.93
Search Intention	0.88	0.78-0.96
Purchase Intention	0.93	0.79-0.97

Attitude toward the Brand (A_{Br})

Respondents indicated their overall evaluation of each brand (Mentadent Crystal Ice or Pepsodent Crystal Ice) by responding to four seven-point items anchored by "strongly disagree/strongly agree." These items were: "Buying the advertised

_____ is a good decision," "I think the advertised _____ is a satisfactory brand," "I think _____ depicted in the ad has a lot of beneficial characteristics," and "I have a favorable opinion of the advertised _____." Coefficient alpha for the measurement items was 0.88 while inter-item correlations among the items ranged between 0.60 and 0.72.

Search Intention

Search intention was measured by three items on a seven-point scale by asking respondents to assume that they are indifferent about toothpaste brands and then respond to statements: "If you were to purchase the advertised toothpaste, how likely is it that you would search for information other than that provided in the ad?" (Very unlikely/Very likely); "How probable is it that you would search for information other than that offered by the advertiser, if you had decided to buy the advertised toothpaste?" (Not probable at all/Very probable); and "If you were going to buy the advertised toothpaste, would you check the attributes of other brands in search of a product better than that you find in the advertisement?" (Definitely would not check attributes of other brands/Definitely would check attributes of other brands). Reliability analysis revealed that coefficient alpha for these three items was 0.88 (inter-item correlations ranging from 0.63 to 0.87).

Purchase Intention

The purchase intention measure consisted of three items anchored by seven-point "strongly disagree/strongly agree," scales. Similar to the instruction given prior to the measurement of "search intention," respondents were asked to assume that they are indifferent about toothpaste brands while responding to the statements. These

statements were: "It is very likely that I will buy the advertised _____," "I will purchase the advertised _____ next time I need toothpaste," and "I will definitely try _____ depicted in the advertisement." Coefficient alpha for these three items was 0.93 (inter-item correlations ranging from 0.80 to 0.85).

Study Design and Procedure

Manipulations

In the pilot study, respondents were exposed to a mock print advertisement of a brand of toothpaste. These advertisements were developed by LSU Graphics Design Department and had a more professional and realistic appearance. Before viewing the advertisement stapled to the inside cover of a folder, respondents were asked to carefully read the instructions attached to the front cover of the folder. Respondents were also told to follow the instructions that appeared before responding to each group of questions and statements, and requested to be as honest as possible in terms of translating their feelings and thoughts to their responses in the questionnaire.

While the layouts of the ads were identical, twelve different full-page, black-and-white advertisements were prepared. Half of these ads were for "Mentadent Crystal Ice," and other half for "Pepsodent Crystal Ice." The brand name appeared at the top one-third of the ad followed by a headline "Why should you choose New _____ the next time you shop for toothpaste?" in WBC and NCA conditions, and "Why should you choose New _____ instead of Close Up Mint Gel?" in the ABC condition.

In the middle one-third of the ad, a picture of advertised toothpaste was placed followed by four attribute ratings. Half of the respondents were exposed to two

irrelevant and two relevant attributes, the other half exposed to four relevant attributes. The last two relevant attributes were kept constant under all conditions. Attributes that were used in the ads are "Herbal ingredient" (irrelevant), "Pump-package" (irrelevant), "Whitening action" (relevant), "ADA approval" (relevant), "Fluoride content" (relevant), and "Anti-tartar action" (relevant). The advertisement ended with the tag line "_____ Recommended by Dentists," in the bottom one-third section, which also included information about a rating scale of the attributes and the company that developed the rating scale.

Sample Description

Two hundred fifty one students from the business school participated in pilot study. However, only 223 respondents were included in the final analysis because of missing manipulation check questions that will be explained in the next section. Of the 223 respondents, 110 were male and 113 were female.

The respondents' age ranged from 19 to 54 while 87.4 percent (194) of them were 19-25 years of age. Subjects were randomly assigned to one of the twelve cells. As shown in Table 3.13, cell sizes ranged from 17 to 22.

As it can be seen from Table 3.13, 76 respondents were exposed to a WBC advertisement, 73 respondents to an ABC advertisement, and 74 respondents to a NCA. Of 223 respondents, 109 were provided with ads that included only relevant attributes, and 114 were provided with ads that included 2 irrelevant and 2 relevant attributes. Finally, 110 respondents saw an advertisement about a high-image brand, while 113 about low-image brand.

Table 3.13
Cell Sizes - Pilot Study

	High-Image Brand		Low-Image Brand	
	Relevant Attribute	Irrelevant Attribute	Relevant Attribute	Irrelevant Attribute
WBC	17	17	20	22
ABC	18	19	18	18
NCA	19	20	17	18

Manipulation Checks

Ad Format

The manipulation for type of advertisement was assessed by asking the respondents to indicate if the ad for either Mentadent Crystal Ice or Pepsodent Crystal Ice was a comparative ad using WBC or ABC strategy, or a noncomparative ad. Respondents were initially instructed to respond to this question without referring to the advertisement. Two hundred twenty three (223) out of the 251 respondents correctly answered this manipulation check question. Therefore, 90 percent of respondents recalled that the ad they were exposed to was either a WBC, an ABC, or NCA type advertisement. A chi-square test indicated that this level of correct response was more than by chance ($\chi^2 = 158.08$, $p < 0.0001$) which in turn shows that the subjects carefully analyzed the ads.

Attribute Relevance

The manipulation of attribute relevance was assessed by asking respondents to rate the relevance of seven different toothpaste attributes on a seven-point scale anchored by "Highly Irrelevant" to "Highly Relevant." The assessment of the

relevance of these attributes was important in order to make sure that the manipulations operated as expected.

As in Table 3.14, relevant attributes (i.e., fluoride content, anti-tartar action, whitening action, and ADA approval) were significantly higher than a test value of 4, ranging from 6.00 to 6.26. On the other hand, irrelevant attributes (i.e., herbal ingredients, tube-winder, and pump-package) were all significantly lower than a test value of 4, ranging between 3.19 and 3.71. These results showed that manipulation of attribute relevance was appropriately conducted, and the attributes used in the ads were perceived by the subjects as intended.

Table 3.14
Means of Attribute Relevance - Pilot Study

	N	Mean	S.D.	t-Value = 4	Sig.
Fluoride content (I1)	223	6.21	1.02	32.193	0.000
Anti-tartar action (I2)	223	6.18	0.96	33.899	0.000
Herbal ingredients (I3)	223	3.24	1.64	-6.934	0.000
Whitening action (I4)	222	6.00	1.25	23.904	0.000
ADA approval (I5)	223	6.26	1.13	29.758	0.000
Tube-winder (I6)	222	3.19	1.60	-7.529	0.000
Pump-package (I7)	223	3.71	1.87	-2.296	0.023

When these attributes were analyzed in more detail with respect to their averages within each cell, ANOVA results revealed that subjects in each cell were not significantly different from each other in terms of their perceptions of attribute relevance except for "ADA approval." The perceptions of relevance for "ADA approval" ranged between 5.60 and 6.72. Comparing 5.6 to 4.0 in a t-test showed that subjects in that cell still perceived "ADA approval" to be significantly relevant ($t=3.875$, $p=0.001$).

Brand Image

The final manipulation check was about respondents' perceptions of brand image. Respondents were provided with two different measures of brand image. The first measure was an eight-item measure consistent with the intended operationalization of the brand image construct consisting of two dimensions, perceived quality and esteem. Reliability analysis on these eight items revealed that coefficient alpha was 0.96, and inter-item correlations among scale items ranged from 0.64 to 0.86. Overall image of "Mentadent" was found to be 4.53 which was significantly higher than 4 ($t=4.543$, $p=0.000$). For "Pepsodent," respondents' perception of overall brand image was 3.24 which was again significantly lower than 4 ($t=-7.533$, $p=0.000$).

A second measure of brand image was a one-item, seven-point scale measure in which respondents indicated their perceptions for the statement: "I believe _____ brand of toothpaste has a: Low Image/High Image." With respect to this one item measure, respondents' perceptions of Mentadent's image was 5.58 ($t=13.923$, $p=0.000$), while it was 3.70 ($t=-2.360$, $p=0.020$) for "Pepsodent." Correlation between an eight-item and one-item measures was 0.64 ($p=0.001$) for Mentadent, and 0.62 ($p=0.001$) for Pepsodent brand respectively.

Additional analyses using ANOVA revealed that the image of Mentadent did not differ across the cells for both eight-item ($F_{5,104}=1.816$, $p=0.116$) and single-item measures for brand image ($F_{5,104}=0.798$, $p=0.553$). On the other hand, while there were no significant differences across the cells for the image of Pepsodent when image was measured by an eight-item scale ($F_{5,107}=2.260$, $p=0.054$), ANOVA results revealed that there was a significant difference among the cells when brand image was measured by a

single-item measure ($F_{5,107}=2.368$, $p=0.044$). Pepsodent's brand image ranged from 2.94 to 4.29. However, the value of 4.29 did not differ significantly from 3.70, the mean image rating based on the single-item scale ($t=2.023$, $p=0.060$). Based on these results, it can be concluded that manipulation of brand image was successful in terms of creating the intended perceived image differences in the experiment.

Hypotheses Test

In the pilot study, subjects were exposed to one of the three types of advertisements, a WBC ad, an ABC ad, or a NCA. Specifically, the first three hypotheses (H1, H2, and H3) assert that compared to ABC ads, WBC ads will be perceived as more believable, and result in fewer counterarguments, fewer negative tactics-related cognition, higher A_{Ad} and A_{Br} , lower search intention, and higher purchase intention. In this respect, these three hypotheses deal with the main effect of ad format (i.e., within- vs. across-brand comparison). H4 posits that claim believability would have a mediating effect on the relationship between ad format and several cognitive responses. The second set of hypotheses, H5 through H7, deal with the interaction effects of ad format and brand image. Finally, the third set of hypotheses, H8 through H10, are about the interaction effects of ad format and attribute relevance.

Prior to specifically testing the hypotheses, several ANOVAs and MANOVAs were conducted with different dependent variables. First, a MANOVA was conducted with "counterarguments" and "tactics-related cognitions" as the dependent variables. Following this, another MANOVA was conducted in which " A_{Ad} ," " A_{Br} ," and "purchase intention" were dependent variables respectively. Finally, an ANOVA was conducted with "search intention" as the dependent variable. Search intention was

analyzed separately because correlation analysis showed that search intention was not significantly correlated with A_{Ad} and purchase intention. Table 3.15 displays the correlations among the dependent variables. Ad format, brand image, and attribute relevance were the independent variables employed in all of these analyses.

Table 3.15
Correlations among the Dependent Variables

Dependent Variables	A_{Ad}	A_{Br}	Search Intention	Purchase Intention
A_{Ad}	1			
A_{Br}	0.61	1		
Search Intention	-0.05*	-0.17	1	
Purchase Intention	0.65	0.59	-0.03*	1

* Not significant at 0.05 level.

As mentioned previously, believability of the advertisement was expected to emerge from subjects' cognitive responses. Because of the lack of appropriate cognitive responses, hypotheses about believability could not be tested in the pilot study. These hypotheses were H1a (positing that "compared to ABC ads, WBC ads will be perceived as more believable"), H4a and H4b (positing that "claim believability will mediate the effect of independent variables on counterarguments and tactics-related cognition," respectively). Also H5a (positing that "ABC ads will result in lower believability than WBC ads and the effect will be greater for low-image compared to high-image brands") and H8a (positing that "ABC ads will be perceived as less believable than WBC ads and the effect will be greater for irrelevant compared to relevant attributes") could not be tested.

Hypotheses Related to Counterarguments and Tactics-Related Cognitions

The results of the MANOVA (see Table 3.16) showed that independent variables did not have significant main effects on counterarguments and tactics-related

cognitions. However, an interaction of brand image and attribute relevance had a significant multivariate effect (Wilks' Lambda=0.912, $F=6.725$, $p=0.002$). The univariate analysis revealed that the two-way interaction between brand image and attribute relevance was significant for both counterarguments ($F_{1,148}=8.378$, $p=0.004$) and tactics-related cognitions ($F_{1,148}=5.729$, $p=0.018$). As shown in Figure 3.1, when the brand image is high, the use of relevant attributes in a comparative ad significantly decreased the number of counterarguments (mean=0.17) over the use of irrelevant attributes (mean=0.69) ($t=-3.025$, $p=0.003$). In the case of low-image brands, the use of irrelevant attributes (mean=0.30) in a comparative ad decreased the number of counterarguments more than relevant attributes (mean=0.50). However, the difference between both relevance conditions was not significant ($t=1.136$, $p=0.259$).

Table 3.16
Effects of Ad Format, Brand Image, and Attribute Relevance on
Counterarguments and Tactics-Related Cognitions - Pilot Study

Source	Multivariate			Univariate F-values	
	Wilks' Lambda	F-values (Sig.)	d.f.	Counterarguments	Tactics-Related Cognitions
Main Effects					
Ad Format (AF)	0.981	1.369 (0.258)	1	1.770 (0.186)	1.099 (0.296)
Brand Image (BI)	0.998	0.154 (0.858)	1	0.031 (0.861)	0.286 (0.593)
Attribute Relevance (AR)	0.976	1.747 (0.178)	1	1.757 (0.187)	1.909 (0.169)
2-way Interactions					
AFxBI	0.991	0.626 (0.536)	1	0.995 (0.320)	0.224 (0.637)
AFxAR	0.996	0.251 (0.778)	1	0.131 (0.718)	0.356 (0.552)
BIxAR	0.912	6.725 (0.002)	1	8.378 (0.004)	5.729 (0.018)
3-way Interaction					
AFxBIxAR	0.999	0.094 (0.911)	1	0.021 (0.885)	0.173 (0.678)
Residual			148

Figure 3.1
Effect of Ad Format and Attribute Relevance on Counterarguments

A similar effect was found for tactics-related cognitions. The number of tactics-related cognitions was 0.31 when a high-image brand used relevant attributes in a comparative ad, while it was 0.75 for irrelevant attributes ($t=-2.531$, $p=0.014$). Contrary to this, while the difference was not significant ($t=0.845$, $p=0.401$), the number of tactics-related cognitions was 0.54 when a low-image brand used relevant attributes in a comparative ad and 0.40 when it used irrelevant attributes (see Figure 3.2). Even though it was not hypothesized, these findings suggest that use of relevant attributes is a better tactic for high-image brands while use of irrelevant attributes is better for low-image brands for creating fewer negative tactics-related cognitions.

H1b and H1c posited that WBC ads would result in fewer counterarguments and fewer negative tactics-related cognitions than ABC ads. As mentioned previously, the

MANOVA results showed no significant main effect of ad format. However, exploratory analyses indicate that WBC ads resulted in fewer counterarguments than ABC ads ($\text{mean}_{\text{WBC}}=0.34$, $\text{mean}_{\text{ABC}}=0.50$). While the difference between the two means was not significant, it was in the hypothesized direction. Similarly, WBC ads resulted in fewer negative tactics-related cognitions than ABC ads ($\text{mean}_{\text{WBC}}=0.44$, $\text{mean}_{\text{ABC}}=0.56$). While, H1b and H1c could not be supported, the findings seem promising.

Figure 3.2
Effect of Ad Format and Attribute Relevance on Tactics-Related Cognitions

Hypotheses 5b and 5c were based on a two-way interaction between ad format and brand image. However, these hypotheses could not be supported due to MANOVA results. As indicated in Table 3.16, the two-way interaction between ad format and

brand image did not have significant effect on counterarguments and tactics-related cognitions (Wilks' Lambda=0.991, $F=0.626$, $p=0.536$).

Exploratory analysis on the interaction of ad format and brand image, however, revealed some valuable findings. H5b posited that ABC ads will result in more counterarguments than WBC ads and the effect will be greater for low-image compared to high-image brands. Consistent with H5b, it was found that ABC ads created more counterarguments and the effect was greater for low-image brand ($\text{mean}_{\text{ABC}}=0.56$ vs. $\text{mean}_{\text{WBC}}=0.27$) ($t=-1.68$, $\text{sig.}=0.097$) compared to high-image brand ($\text{mean}_{\text{ABC}}=0.45$ vs. $\text{mean}_{\text{WBC}}=0.41$) ($t=-0.259$, $\text{sig.}=0.796$). Such a finding might also be attributable to consumers' suspicions about the claims of a low-image brand that compared itself to a brand with higher image (Pepsodent vs. Close Up). On the other hand, under the high-image brand condition, the comparison brand had lower image (Mentadent vs. Close Up). Therefore, it is more likely that consumers did not suspect the credibility of claims made by a high-image brand and did not counterargue. Figure 3.3 presents the findings graphically.

While the level of counterarguments for high-image remained relatively the same under both ad formats, there was a significant difference for a low-image brand under different ad formats ($t=-1.68$, $\text{sig.}=0.097$). Findings showed that using a WBC ad may be a better strategy for low-image brands than an ABC ad. In this case, consumers might simply accept the claim of a low-image brand that its new product is better than the old one. As a result, consumers' counterarguments are fewer in number.

H5c proposed that ABC ads will result in more negative tactics-related cognitions than WBC ads and the effect will be greater for low-image compared to

high-image brands. As indicated in Table 3.16, the multivariate interaction between ad format and brand image is not significant. Exploratory analysis presented in Figure 3.4 shows that the ABC ad generated higher tactics-related cognition than the WBC ad. However, contrary to H5c, the effect was smaller for low-image (mean_{ABC}=0.50 vs. mean_{WBC}=0.43) ($t=-0.475$, sig.=0.636) compared to high-image brand (mean_{ABC}=0.62 vs. mean_{WBC}=0.44) ($t=-1.009$, sig.=0.316).

Figure 3.3
Effect of Ad Format and Brand Image on Counterarguments

This finding suggests that WBC ads used by high- and low-image brands would result in an equal number of negative tactics-related cognitions. According to these results, high-image brands are more likely to benefit from WBC ads than ABC ads in terms of creating fewer negative tactics-related cognitions. However, for low-image brands, both WBC and ABC ads seem to be a viable choice.

Figure 3.4
Effect of Ad Format and Brand Image on Tactics-Related Cognitions

H8b posited that ABC ads will result in more counterarguments than WBC ads, and the difference will be greater for irrelevant attributes compared to relevant attributes. As indicated in Table 3.16, the two-way multivariate interaction between ad format and attribute relevance was not significant.

Figure 3.5 presents the interaction of ad format and attribute relevance for exploratory purposes. The interaction of ad format and attribute relevance indicated that even though counterarguments were greater for ABC ads in general, the difference between ABC and WBC for the irrelevant condition (difference=0.120) was smaller than the difference for the relevant condition (difference=0.210). While these differences are not significant, the direction of the finding is contrary to the expectations of H8b.

Figure 3.5
Effect of Ad Format and Attribute Relevance on Counterarguments

Figure 3.6
Effect of Ad Format and Attribute Relevance on Tactics-Related Cognitions

H8c premised that ABC ads will result in more negative tactics-related cognitions than WBC ads, and the difference will be greater for irrelevant attributes compared to relevant attributes. While the multivariate interaction is not significant, the exploratory results seem promising. The difference between WBC and ABC ads in creating tactics-related cognitions when claims were based on irrelevant attributes was higher ($\text{mean}_{\text{WBC} \times \text{Ir.}} = 0.48$ vs. $\text{mean}_{\text{ABC} \times \text{Ir.}} = 0.67$) ($t = -1.272$, $\text{sig.} = 0.207$) than the difference when claims were based on relevant attributes ($\text{mean}_{\text{WBC} \times \text{Rel.}} = 0.39$ vs. $\text{mean}_{\text{ABC} \times \text{Rel.}} = 0.44$) ($t = -0.249$, $\text{sig.} = 0.804$). Figure 3.6 presents the interaction between ad format and attribute relevance.

Hypotheses Related to A_{Ad} , A_{Br} , and Purchase Intention

H2a and H2b posited that WBC ads would result in higher A_{Ad} and A_{Br} than ABC ads. Similarly, H6a and H6b focused on the possible interaction effect of ad format and brand image on A_{Ad} and A_{Br} . H3b argued that WBC ads would result in higher purchase intentions than ABC ads, and H7b focused on the interaction effect of ad format and brand image on purchase intention. A MANOVA was conducted with A_{Ad} , A_{Br} , and purchase intention as the dependent variables and ad format, brand image, and attribute relevance as the manipulated variables in order to test these hypotheses.

As shown in Table 3.17, multivariate and univariate main effects of ad format on A_{Ad} , A_{Br} , and purchase intention were not significant. Brand image had a significant multivariate effect (Wilks' Lambda=0.941, $F = 2.921$, $p = 0.036$). The multivariate main effect was attributable to the dependent variable of A_{Br} ($F_{1,148} = 8.135$, $p = 0.005$). Results also showed that interaction of ad format with brand image had a significant multivariate effect (Wilks' Lambda=0.934, $F = 3.282$, $p = 0.023$) which was attributable to

its univariate effect on purchase intention ($F_{1,148}=9.631$, $p=0.002$). Interestingly, attribute relevance had marginally significant univariate effects on A_{Ad} ($F_{1,148}=2.853$, $p=0.093$), A_{Br} ($F_{1,148}=3.477$, $p=0.064$), and purchase intention ($F_{1,148}=3.526$, $p=0.062$) while its multivariate effect was not significant. Finally, while the three-way interaction did not have multivariate significance, there was a significant univariate effect on A_{Br} ($F_{1,148}=4.336$, $p=0.039$).

Table 3.17
Effects of Ad Format, Brand Image, and Attribute Relevance on A_{Ad} , A_{Br} , and Purchase Intention - Pilot Study

Source	Multivariate			Univariate F-values		
	Wilks' Lambda	F-values (Sig.)	d.f.	A_{Ad}	A_{Br}	Purchase Intention
Main Effects						
Ad Format (AF)	0.987	0.606 (0.612)	1	0.021 (0.885)	0.860 (0.355)	0.704 (0.403)
Brand Image (BI)	0.941	2.921 (0.036)	1	1.569 (0.212)	8.135 (0.005)	1.285 (0.259)
Attribute Relevance (AR)	0.969	1.483 (0.222)	1	2.853 (0.093)	3.477 (0.064)	3.526 (0.062)
2-way Interactions						
AFxBI	0.934	3.282 (0.023)	1	2.588 (0.110)	2.207 (0.140)	9.631 (0.002)
AFxAR	0.989	0.504 (0.680)	1	0.028 (0.867)	0.276 (0.600)	1.002 (0.318)
BIxAR	0.982	0.853 (0.467)	1	0.803 (0.372)	0.133 (0.716)	0.010 (0.922)
3-way Interaction						
AFxBIxAR	0.964	1.724 (0.165)	1	0.537 (0.465)	4.336 (0.039)	1.271 (0.262)
Residual			148			

According to H6a, ABC ads will result in lower A_{Ad} than WBC ads and the effect will be stronger for low-image compared to high-image brands. Findings showed that an ABC ad used by a high-image brand resulted in higher A_{Ad} than a WBC ad used by the same brand ($mean_{ABC}=4.51$ vs. $mean_{WBC}=4.15$), but the difference was not

significant ($t=-1.032$, $\text{sig.}=0.306$). An ABC ad used by a high-image brand resulted in higher A_{Ad} (mean=4.51) than an ABC ad used by a low-image brand (mean=3.81). For the low-image brand, the ABC ad resulted in lower A_{Ad} than the WBC ad (mean_{ABC}=3.81 vs. mean_{WBC}=4.23), but the difference was not significant ($t=1.193$, $\text{sig.}=0.237$). The second finding is consistent with H6a. The image of the brand does not have any effect on A_{Ad} when the ad format is WBC. Also, ABC seems to be a better ad tactic for high-image brands while WBC is for low-image brands. Figure 3.7 presents the interaction of ad format and brand image.

Figure 3.7
Effect of Ad Format and Brand Image on A_{Ad}

H6b premised that ABC ads will result in lower A_{Br} than WBC ads and the effect will be greater for low-image compared to high-image brands. H6b was supported. Findings showed that when the ABC ad was used by a low-image brand it

actually resulted in lower A_{Br} (mean=4.31) than the WBC (mean=4.76). This difference was significant ($t=1.668$, $sig.=0.099$). However, when the ABC ad was used by high-image brand, it resulted in higher A_{Br} (mean=5.12) than the WBC ad (mean=5.02) but the difference was not significant. As presented in Figure 3.8, the interaction of ad format and brand image in affecting A_{Br} was generally consistent with the proposed hypothesis.

Figure 3.8
Effect of Ad Format and Brand Image on A_{Br}

H3b, which posited that WBC ads would result in higher purchase intentions than ABC ads could not be supported because of the non-significance of the difference between the effects of these two ad formats (see Table 3.17). However, respondents who were exposed to WBC ads (mean=3.90) did indicate a higher purchase intentions than the ones exposed to ABC ads (mean=3.69). In this respect, the direction of the effect is consistent with H3b.

H7b posited that ABC ads would result in lower purchase intentions than WBC ads and the effect would be greater for low-image compared to high-image brands. The multivariate interaction effect of ad format and brand image was significant (Wilks' Lambda=0.934, $F=3.282$, $p=0.023$). The multivariate interaction was attributable to mainly purchase intention ($F_{1,148}=9.631$, $p=0.002$). Incidentally, univariate results for A_{Ad} and A_{Br} were also encouraging.

As indicated in Figure 3.9, respondents had significantly higher purchase intentions under the WBCxLow-Image condition (mean=4.155) than under the ABCxLow-Image condition (mean=3.14) ($t=2.861$, sig.=0.005). On the other hand, the ABCxHigh-Image condition resulted in higher purchase intention (mean=4.23) than the WBCxHigh-Image condition (mean=3.65) ($t=-1.486$, sig.=0.142). The nature of this interaction is again consistent with H7b.

Figure 3.9
Effect of Ad Format and Brand Image on Purchase Intention

Based on these results, WBC seems to be a better tactic for low-image brands while ABC and WBC may work similarly for high-image brands in influencing purchase intentions. It seems that, when the advertised brand had a lower image than the comparison brand, consumers are more likely to question why the comparison brand was not the highest image brand in the product category (e.g., Crest or Colgate).

H9a posited that while ABC ads would result in lower A_{Ad} than WBC ads, the difference would be greater for irrelevant compared to relevant attributes. As indicated in Table 3.17, the multivariate interaction between ad format and attribute relevance was not significant. Also, as presented in Figure 3.10, there was almost no difference for A_{Ad} under both ad formats using relevant attributes ($mean_{WBC \times Rel.} = 4.38$ vs. $mean_{ABC \times Rel.} = 4.38$). However, while the difference was not significant, the WBC ad resulted in higher A_{Ad} ($mean = 4.01$) than the ABC ad using irrelevant attributes ($mean = 3.93$). Therefore, the direction of the relationship is consistent with H9a.

Figure 3.10
Effect of Ad Format and Attribute Relevance on A_{Ad}

H9b focused on the effect of the interaction between ad format and attribute relevance on A_{Br} . It specifically posited that while ABC ads would result in lower A_{Br} than WBC ads, the difference would be greater for irrelevant compared to relevant attributes. Figure 3.11 presents the results graphically. The difference in A_{Br} between an ABC and a WBC ad when using relevant attributes was 0.074 ($mean_{WBC \times Rel.} = 5.01$ vs. $mean_{ABC \times Rel.} = 4.94$) and not significant ($t = 0.303$, $sig. = 0.763$). Also, the WBC ad resulted in higher A_{Br} (mean = 4.76) than the ABC ad using irrelevant attributes (mean = 4.49), and the difference was larger than the ABC condition (difference = 0.27) but not significant ($t = 0.808$, $sig. = 0.421$). In this respect, exploratory results relating to H9b are encouraging.

Figure 3.11
Effect of Ad Format and Attribute Relevance on A_{Br}

H10b posited that while ABC ads would result in lower purchase intention compared to WBC ads, the difference would be greater for irrelevant compared to

relevant attributes. Exploratory analyses showed that when employing relevant attributes, the WBC ad and the ABC ad resulted in almost equal purchase intention ($\text{mean}_{\text{WBC} \times \text{Rel.}} = 4.01$ vs. $\text{mean}_{\text{ABC} \times \text{Rel.}} = 4.06$) ($t = -0.029$, $\text{sig.} = 0.977$). However, when irrelevant attributes were employed in the ad, the WBC ad ($\text{mean} = 3.79$) resulted in higher purchase intention than the ABC ad ($\text{mean} = 3.31$) ($t = 1.259$, $\text{sig.} = 0.212$). These exploratory results relating to H10b are also very encouraging. The results are presented graphically in Figure 3.12. Findings are also consistent with the notion that irrelevant attributes might lead to lower purchase intentions. However, brands which use a WBC strategy do not suffer in terms of purchase intention as much as the brands using an ABC strategy. Therefore, the results indicate that it is not a wise idea to show that one brand is better than its competitors when using irrelevant attributes in ABC ads.

Figure 3.12
Effect of Ad Format and Attribute Relevance on Purchase Intention

Hypotheses Related to Search Intention

Hypotheses related to the effects of independent variables on search intention (i.e., H3a, H7a, and H10a) were tested by an ANOVA. The results showed that none of the independent variables and interactions among them was significant in affecting search intention (see Table 3.18). Further analysis revealed that H3a could not be supported since the WBC ad (mean=3.39) did not result in lower search intention than the ABC ad (mean=3.33) ($t=0.286$, $\text{sig.}=0.775$). H7a posited that ABC ads will result in higher search intention than WBC ads and the effect will be greater for low-image compared to high-image brands.

Table 3.18
Effects of Ad Format, Brand Image, and Attribute Relevance on Search Intention - Pilot Study

Source	F-value	Sig.	d.f.
Main Effects			
Ad Format (AF)	0.040	0.841	1
Brand Image (BI)	2.188	0.141	1
Attribute Relevance (AR)	0.998	0.319	1
2-way Interactions			
AfxBI	0.449	0.504	1
AfxAR	1.643	0.202	1
BixAR	0.016	0.901	1
3-way Interaction			
AfxBixAR	1.190	0.277	1
Residual			148

Preliminary findings showed that when the low-image brand used an ABC ad, it actually resulted in higher search intention (mean=3.63) than the WBC ad (mean=3.50) ($t=0.302$, $\text{sig.}=0.763$). This finding is generally consistent with H7a. The results also showed that when a high-image brand used a WBC ad, search intention was higher than with the ABC ad (mean_{WBCxHI}=3.28 vs. mean_{ABCxHI}=3.03) ($t=0.655$, $\text{sig.}=0.515$). While

the difference was not significant, it was not consistent with the direction proposed in H7a. Figure 3.13 presents the findings graphically.

Figure 3.13
Effect of Ad Format and Brand Image on Search Intention

Finally, H10a proposed that ABC ads would result in higher search intention than WBC ads and the difference would be greater for irrelevant compared to relevant attributes. While the difference between the WBC and ABC conditions for search intention was 0.412 when irrelevant attributes were used, it was in the opposite direction of the relationship hypothesized in H10a ($\text{mean}_{\text{WBC} \times \text{Irrel.}} = 3.70$ vs. $\text{mean}_{\text{ABC} \times \text{Irrel.}} = 3.29$) ($t = 1.072$, $\text{sig.} = 0.287$). The difference between WBC and ABC conditions for search intention was 0.30 when relevant attributes were used and it was in the hypothesized direction brand ($\text{mean}_{\text{WBC} \times \text{Rel.}} = 3.07$ vs. $\text{mean}_{\text{ABC} \times \text{Rel.}} = 3.37$) ($t = -0.720$, $\text{sig.} = 0.474$).

Figure 3.14
Effect of Ad Format and Attribute Relevance on Search Intention

As it can be seen in Table 3.18 and Figure 3.14, use of relevant or irrelevant attributes in ABC ads does not create any significant difference on search intention. However, results suggest that WBC ads should employ relevant attributes in order to decrease consumers' search intentions.

Table 3.19 summarizes the results pertaining to hypotheses one through four.

Table 3.19
Main Effect of Ad Format (WBC vs. ABC) on Dependent Variables

	Sig.	Direction
Believability (WBC > ABC) - (H1a)	Not Tested	
Counterarguments (WBC < ABC) - (H1b)	N.S.	√
Tactics-Related Cognitions (WBC < ABC) - (H1c)	N.S.	√
A_{Ad} (WBC > ABC) - (H2a)	N.S.	√
A_{Br} (WBC > ABC) - (H2b)	N.S.	√
Search Intention (WBC < ABC) - (H3a)	N.S.	x
Purchase Intention (WBC > ABC) - (H3b)	N.S.	√
Mediation effect of claim believability on counterarguments - (H4a)	Not Tested	
Mediation effect of ad believability on tactics-related cognitions - (H4b)	Not Tested	

Table 3.20 summarizes the results pertaining to hypotheses five through seven.

Table 3.20
Interaction Effect of Ad Format and Brand Image on Dependent Variables

	Sig.	Direction
Believability (WBC > ABC and the effect will be greater for low-image compared to high-image brands) - (H5a)	Not Tested	
Counterarguments (WBC < ABC and the effect will be greater for low-image compared to high-image brands) - (H5b)	Sig.	√
Tactics-Related Cognitions (WBC < ABC and the effect will be greater for low-image compared to high-image brands) - (H5c)	N.S.	X
A_{Ad} (WBC > ABC and the effect will be greater for low-image compared to high-image brands) - (H6a)	N.S.	√
A_{Br} (WBC > ABC and the effect will be greater for low-image compared to high-image brands) - (H6b)	Sig.	√
Search Intention (WBC < ABC and the effect will be greater for low-image compared to high-image brands) - (H7a)	N.S.	√
Purchase Intention (WBC > ABC and the effect will be greater for low-image compared to high-image brands) - (H7b)	Sig.	√

Table 3.21 summarizes the results pertaining to hypotheses eight through ten.

Table 3.21
Interaction Effect of Ad Format and Attribute Relevance on Dependent Variables

	Sig.	Direction
Believability (WBC > ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H8a)	Not Tested	
Counterarguments (WBC < ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H8b)	N.S.	X
Tactics-Related Cognitions (WBC < ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H8c)	N.S.	√
A_{Ad} (WBC > ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H9a)	N.S.	√
A_{Br} (WBC > ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H9b)	N.S.	√
Search Intention (WBC < ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H10a)	N.S.	√
Purchase Intention (WBC > ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H10b)	N.S.	√

Pretest Four

Pretest Method

While most of the results found in the pilot study were in the anticipated direction, they were not strong enough to support most of the proposed hypotheses. A primary reason for non-significant effects may be the small sample size. Another major reason for the lack of significant results might be the poor manipulation of the comparison brand in the experiment. Usually, it is unlikely to compare a high-image brand to a moderate- or low-image brand (e.g., SONY compared to Sanyo). Also, it is more likely to compare a low-image brand to a high-image brand in order for association effect to occur. The comparison brand used in the pilot study was "Close Up," a brand rated as moderate on the image measures in pretest one. Some respondents expressed concerns such as "Why Pepsodent is not comparing itself to Crest?" and "How does Pepsodent compare to Colgate?" Such statements indicate that the reference point (i.e., comparison brand) was not a good selection in the case of a low-image brand. On the other hand, none of the respondents was concerned about comparison of Mentadent with Close Up. Thus, it seems that consumers expect to see (in the case of a comparative ad) a toothpaste brand compared to either Colgate or Crest, which are the high-image brands in that product category.

Pretest four was conducted to assess consumers' expectations about the comparison brands to be used in the CAs for the toothpaste category. The purpose of this pretest was to select an ecologically valid comparison brand to be used in the main study. The subject pool consisted of thirty-five undergraduate students. The questionnaire used in pretest four is presented in Appendix E. Approximately half of

the subjects was asked to assess the likelihood of the use of different toothpaste brands as comparison brands when conducting comparative advertising for Mentadent on a seven-point Likert scale anchored by "not likely at all" to "extremely likely." The other half of the subjects were asked the same question for the Pepsodent brand.

Pretest Analysis and Results

The results showed that Mentadent was more often expected to be compared with Crest, Colgate, and Close Up than Gleem and Ultrabrite brands. Pepsodent was expected to be compared more often with Gleem and Ultrabrite than Crest, Colgate, and Close Up. Table 3.22 presents the means of the likelihood of being used as comparison brands with respect to the sponsored brand (i.e., Mentadent or Pepsodent). Comparison of means for Mentadent and Pepsodent showed that there were no significant differences in the likelihood of being compared with each of these five brands.

Table 3.22
Means of the Likelihood of Being Used as Comparison Brands for Toothpaste Category

	Mentadent (<i>n</i>=16)	Pepsodent (<i>n</i>=19)
Crest	4.69	4.05
Colgate	4.69	3.84
Close Up	4.56	4.32
Gleem	3.38	4.37
Ultrabrite	3.69	4.47

Further exploratory analysis showed that the range of the difference between the means of the likelihood of being used as comparison brand for Mentadent was 1.31 while it was 0.63 for Pepsodent. The order of the likelihood of being used as a comparison brand for Mentadent was: Crest/Colgate, Close Up, Ultrabrite, and Gleem

(from most likely to least likely). For Pepsodent, the order of the comparison likelihood was Ultrabrite, Gleem, Close Up, Crest, and Colgate.

These orders indicate that consumers expect to see a comparison of Mentadent (high-image brand) to high- or moderate image brands. The results of t-tests showed that the likelihood of Mentadent being compared to Crest was higher than for Ultrabrite ($t=1.945$, $p=0.071$), or Gleem ($t=2.553$, $p=0.022$). Colgate was also perceived as a more likely comparison brand than Ultrabrite ($t=2.467$, $p=0.026$), or Gleem ($t=3.238$, $p=0.006$). Finally, Close Up was perceived to be a more likely comparison brand than Ultrabrite ($t=2.399$, $p=0.030$), or Gleem ($t=3.255$, $p=0.005$). The difference of the likelihood between Ultrabrite and Gleem as comparison brands for Mentadent was not significant ($t=-0.549$, $p=0.591$).

When the same analysis was conducted for Pepsodent, it was seen that there was no significant difference among the means of the likelihood of Pepsodent being compared to brands mentioned above. While the likelihood of Pepsodent being compared to lower-image brands was higher, consumers also expected Pepsodent to be compared to high- or moderate image brands. Based on the findings above, a high-image brand will be used as a comparison brand in the ads for both brands (i.e., Mentadent and Pepsodent).

Pretest Five

Pretest Method

Pretest five was conducted to select an appropriate sub-brand name for Mentadent and Pepsodent. Because Crest was selected as the comparison brand in the main study, a sub-brand name for Crest also had to be identified. Initial examination of

sub-brand names revealed that Mentadent currently has a sub-brand name "Multi Action Plus." It was also found that Crest has a sub-brand called "Multi Care." Because of the apparent similarity of these two sub-brand names, it was decided to conduct a pretest to confirm whether consumers perceive these sub-brand names as similar. The purpose of this pretest was to select ecologically valid sub-brand names to be used in the main study.

The subjects consisted of fifteen undergraduate students. The questionnaire used in pretest five is presented in Appendix F. Before responding to the questions, the subjects were given the following scenario and instruction: " A nationally marketed toothpaste brand will introduce a new toothpaste to the market that will compete against Colgate Total, a multi-purpose toothpaste. Brand manager wants to decide on a sub-brand name that will best describe the *multi-purpose* characteristic of new toothpaste. Based on the information above, please indicate your response about the following statements by circling the most appropriate number."

The subjects were asked to respond to five questions on a seven-point scale anchored by "not similar at all/very similar." The questions were: "In terms of implying their *multi-purpose* characteristic, how similar are "Multi-Action Plus" and "Total" sub-brand names," "In terms of implying their *multi-purpose* characteristic, how similar are "Multi-Action Plus" and "Multi Care" sub-brand names," "In terms of implying their *multi-purpose* characteristic, how similar are "Multi Care" and "Total" sub-brand names," "In terms of implying their *multi-purpose* characteristic, how similar are "Multi Action Plus" and "Multi Care Plus" sub-brand names," and "In terms of implying their

multi-purpose characteristic, how similar are "Multi Care Plus" and "Total" sub-brand names?"

Pretest Analysis and Results

The results showed that "Multi Action Plus" and "Multi Care Plus" were the two sub-brand names which had the highest similarity in terms of describing the multi-purpose characteristic of a new toothpaste. Table 3.23 presents the perceived similarity scores of the sub-brand names included in the pretest.

Table 3.23
Similarity Scores of Sub-Brand Names

(Test-value=4.0)	Similarity Score	t-value	sig.
Multi Action Plus vs. Total	4.20	0.49	0.629
Multi Action Plus vs. Multi Care	5.40	5.96	0.000
Multi Care vs. Total	4.33	1.05	0.313
Multi Action Plus vs. Multi Care Plus	6.00	7.75	0.000
Multi Care Plus vs. Total	4.27	0.67	0.512

As presented in Table 3.23, the perceived similarity between Multi Action Plus and Multi Care Plus was significantly different from 4.0 ($t=7.75$, $p=0.000$). The respondents also found Multi Action Plus and Multi Care highly similar ($t=5.96$, $p=0.000$). However, the perceived similarity scores between Multi Action Plus and Total, Multi Care and Total, and Multi Care Plus and Total were not significantly different from the test value of 4.0. Based on these findings, "Multi Action Plus" and "Multi Care Plus" sub-brands were selected to be used in the main study. Under the high brand image condition, the sponsor brand was New Mentadent Multi Action Plus, while it was New Pepsodent Multi Action Plus under the low brand image condition. Under the WBC condition, the comparison brand was either Mentadent Multi Action

Plus or Pepsodent Multi Action Plus, while the comparison brand was Crest Multi Care Plus for the ABC condition.

CHAPTER 4: MAIN STUDY

The main study involved a 2 (Ad Format) x 2 (Brand Image) x 2 (Attribute Relevance) between-subjects experimental design. Unlike the pilot study, the main study did not include a noncomparative ad manipulation. Therefore, the two ad formats used in the main study were: a.) Within-Brand Comparison (WBC) ad, and b.) an Across-Brand Comparison (ABC) ad.

One of the concerns raised by the respondents in the pilot study related to the comparison brand used against Mentadent and Pepsodent. As previously mentioned, some respondents expected to see a high-image brand of toothpaste used as a comparison brand especially when Pepsodent was used as a sponsor brand. Based on the findings of pretest four, Crest was used as a high-image comparison brand in the main study. Based on the findings of pretest five, "Multi Action Plus" was selected as the sub-brand name to be used with the Mentadent and Pepsodent brand names. Crest "Multi Care Plus" was selected as the comparison brand.

Attribute relevance manipulation also was changed in the main study. In the pilot study, four relevant attributes were included under the "relevance" condition. On the other hand, two relevant and two irrelevant attributes were used under the "irrelevance" condition. Additionally, those two irrelevant attributes were presented after the relevant attributes in the ad copy. Presence of relevant attributes in the "irrelevance" condition might have caused respondents to undermine the "importance" of irrelevant attributes. Therefore, use of relevant and irrelevant attributes together might have attenuated the effect of the "irrelevance" condition on consumers' perceptions and led to insignificant results. In order to have proper manipulation of the

attribute relevance variable in the main study, the "irrelevance" condition was manipulated similar to the "relevance" condition. That is, only one type of attribute (i.e., relevant or irrelevant) was included in each condition.

The questionnaire used in the main study was very similar to the questionnaire used in the pilot study except for few minor changes. The main study questionnaire (see Appendix G) consisted of measures of all the dependent variables, manipulation check questions, other relevant measures, and demographic questions. Measures that were used in the main study questionnaire are discussed next.

Cognitive Responses

As mentioned before, respondents in the pilot study failed to generate cognitive responses on ad believability that made the testing of several hypotheses impossible. Therefore, the main study questionnaire included a scale to measure consumers' perceptions about ad believability. The ad believability measure consisted of four statement items anchored by seven-point "strongly disagree/strongly agree" scales, and one question. These four items were: "The claims in the ad are true," "I believe the claims in the ad," "The ad is sincere," and "I think the ad is honest." The question was "How likely is it that New _____ is a better toothpaste than _____?" (Very Unlikely/Very Likely). Coefficient alpha for the measurement items was 0.90 (inter-item correlations ranging from 0.47 to 0.82). The results about reliability of dependent variables are summarized in Table 4.1.

Table 4.1
Reliability of Dependent Variables - Main Study

Dependent Variable	Coefficient Alpha for Pooled Data	Range of Alpha across cells
Ad Believability	0.90	0.71-0.91
Attitude toward the Ad	0.89	0.76-0.91
Attitude toward the Brand	0.85	0.54-0.84
Search Intention	0.83	0.70-0.90
Purchase Intention	0.90	0.78-0.94

Two other cognitive responses used in the main study were measured right after the respondents were exposed to the ad and responded to items measuring ad believability. The subjects were given the following instruction: "We are interested in knowing what was going through your mind with respect to the claims made in the advertisement as you were reading the ad. Please write down anything and everything you remember going through your mind about the claims when you were reading the ad." The number of counterarguments was identified from the subjects' responses. Following this section, subjects were instructed: "We are interested in knowing what was going through your mind with respect to the advertising tactic used by the sponsor as you were reading the ad. Please write down anything and everything you remember going through your mind about the advertising tactic when you were reading the ad." The number of negative tactics-related cognitions was identified from the subjects' responses to the above instruction.

These cognitive responses were coded into three categories by the researcher and an independent judge. The three categories were: (1) thoughts about the claims (i.e., support arguments and counterarguments), (2) negative thoughts about comparative advertising (i.e., tactics-related cognitions), and (3) other thoughts. Coding reliability was measured by the method recommended by Holsti (1969). The coefficient

of reliability by Holsti is calculated by multiplying the number of coding decisions agreed upon by both judges by two and dividing it by the total number of coding decisions made by each judge. The coefficient of reliability based on this formula was 0.82. This result suggests that the coding decisions made by the two judges were reliable and acceptable.

Attitude toward the Ad (A_{Ad})

Attitude toward the ad was measured by the same four items used in the pilot study. Coefficient alpha for these four items was 0.89 while inter-item correlations among the items ranged between 0.60 and 0.75.

Attitude toward the Brand (A_{Br})

Respondents indicated their overall evaluation of each brand (New Mentadent Multi Action Plus or New Pepsodent Multi Action Plus) by responding to the same four items used in the pilot study. Coefficient alpha for the measurement items was 0.85 and inter-item correlations among these items ranged between 0.45 and 0.70. Among the four measurement items, only the second item seemed to have a low correlation with the others. Reliability analysis revealed that coefficient alpha for cell 111 (WBC x Mentadent x Relevant Attribute) would increase to 0.66 from 0.54 if the second item is deleted.

Search Intention

Search intention was measured by the same three items used in the pilot study. Respondents were asked to assume that they are indifferent about toothpaste brands while responding to the statements. Coefficient alpha for these three items was found to be 0.83 (inter-item correlations ranging between 0.51 and 0.81).

Purchase Intention

The purchase intention measure consisted of the same three items used in the pilot study. Again, respondents were asked to assume that they are indifferent about toothpaste brands while responding to these statements. Coefficient alpha for these three items was 0.90 while the inter-item correlations ranged from 0.69 to 0.79.

Study Design and Procedure

Similar to the pilot study, respondents were exposed to a mock print advertisement of a brand of toothpaste in the main study. The advertisements were developed by the Graphics Design Department of a major university. Respondents were asked to carefully read the instructions attached to the front cover of the folder before viewing the advertisement stapled to the inside cover, and were requested to be as honest as possible in terms of translating their feelings and thoughts to their responses in the questionnaire.

While the layouts of the ads were identical, eight different full-page, black-and-white advertisements were prepared. Half of these were for "New Mentadent Multi Action Plus," and other half for "New Pepsodent Multi Action Plus." The brand name appeared at the top one third of the ad followed by a main headline "We are better than ever!" in all of the eight advertisements. The main headline was followed by a second headline "Why should you choose New _____ Multi Action Plus the next time you shop for toothpaste?" in the WBC condition, and "Why should you choose New _____ Multi Action Plus instead of Crest Multi Care Plus?" in the ABC condition.

In the middle one-third of the ad, a picture of advertised toothpaste was placed followed by two attribute ratings. Half of the respondents were exposed to only two relevant attributes, while the other half was exposed to only two irrelevant attributes. Attributes that were used in the ads are "Whitening action" (relevant), "ADA approval" (relevant), "Herbal ingredient" (irrelevant), and "Color" (irrelevant). The advertisement ended with the tag line "_____ Recommended by Dentists," in the bottom one-third section, which was followed by an information about a rating scale of the attributes and the company that developed the rating scale.

Sample Description

The sample consisted of two hundred sixteen students from the business schools at Louisiana State University and Loyola University-New Orleans. Thirty respondents were dropped because of missing manipulation check questions leaving 186 questionnaires to be included in the final analysis (i.e., 13 subjects missed the ad format manipulation check while 17 missed the attribute relevance manipulation check). Of the 186 respondents, 88 were male and 98 were female. The respondents' age ranged from 18 to 40 while 92.5 percent (172) of them were 18-23 years of age. Subjects were assigned to one of the eight cells. As shown in Table 4.2, cell sizes ranged from 18 to 26.

Table 4.2
Cell Sizes - Main Study

	High-Image Brand		Low-Image Brand	
	Relevant Attribute	Irrelevant Attribute	Relevant Attribute	Irrelevant Attribute
WBC	25	25	21	25
ABC	22	26	24	18

Table 4.2 shows that 96 respondents were exposed to a WBC advertisement and 90 respondents to an ABC advertisement. Of 186 respondents, 92 were provided with ads that included relevant attributes, and 94 were provided with ads that included irrelevant attributes. Finally, 98 respondents saw an advertisement promoting a high-image brand, while 88 respondents were exposed to an advertisement about a low-image brand.

Manipulation Checks

Ad Format

The manipulation check for ad format was assessed by asking the respondents to indicate if the ad for either New Mentadent Multi Action Plus or New Pepsodent Multi Action Plus was a comparative ad using WBC or ABC strategy, or a noncomparative ad. Similar to the pilot study, respondents were initially instructed to respond to this question without referring to the advertisement. Two hundred three (203) out of the 216 respondents correctly answered this manipulation check question. Therefore, 94 percent of respondents correctly recalled the type of advertisement they were exposed to. A chi-square test indicated that this level of correct response was more than by chance ($\chi^2=167.13$, $p<0.0001$) which shows that the subjects carefully analyzed the ads.

Attribute Relevance

Similar to the pilot study, the manipulation of attribute relevance was assessed by asking respondents to rate the relevance of seven different toothpaste attributes on a seven-point scale anchored by "Highly Irrelevant" to "Highly Relevant." It was determined that seventeen (17) respondents were not able to evaluate the relevance of attributes correctly. Therefore, these respondents were eliminated from further analysis.

Table 4.3 shows that all relevant attributes (i.e., fluoride content, anti-tartar action, whitening action, and ADA approval) presented to the respondents were evaluated to be significantly higher than a test value of 4, ranging from 5.89 to 6.10. On the other hand, irrelevant attributes (i.e., herbal ingredients, tube-winder, and pump-package) were all significantly lower than a test value of 4, ranging between 2.23 and 2.80. Again, these results showed that manipulation of attribute relevance was appropriately performed, and the attributes used in the ads were perceived by the subjects as intended. Further analysis revealed that subjects in each cell were not significantly different from each other in terms of their perceptions of attribute relevance for all of the seven attributes used in the manipulation check.

Table 4.3
Means of Attribute Relevance - Main Study

	N	Mean	S.D.	t-Value = 4	Sig.
Fluoride content (h1)	186	6.10	1.13	25.198	0.000
Anti-tartar action (h2)	186	6.06	1.02	27.550	0.000
Herbal ingredients (h3)	186	2.80	1.46	-11.223	0.000
Whitening action (h4)	186	5.89	1.19	21.683	0.000
ADA approval (h5)	186	5.94	1.38	19.157	0.000
Tube-winder (h6)	186	2.66	1.43	-12.745	0.000
Pump-package (h7)	186	2.23	1.39	-17.316	0.000

Brand Image

The third and final manipulation check was the examination of respondents' perceptions of brand image. Respondents' perceptions of brand image were measured by two different measures of brand image. The first measure was a twelve-item measure consisting of three dimensions of brand image (i.e., perceived quality, esteem, and personality). Reliability analysis on these twelve items revealed that coefficient alpha was 0.95, and inter-item correlations among scale items ranged between 0.31 and

0.90. Based on this twelve-item scale, overall image of "Mentadent" was found to be 4.07 which was not significantly higher than 4 ($t=0.58$, $p=0.564$). Respondents' perception of overall brand image for "Pepsodent" was 2.52, and was significantly lower than 4 ($t=-15.66$, $p=0.000$). Since the brand image for Pepsodent was significantly lower than 4, it was also significantly lower than the brand image for Mentadent.

The same analysis that was conducted in the third pretest was also conducted in the main study. Reliability analysis on twelve items revealed that some items measuring the personality dimension of brand image had low correlations with the other items. Therefore, reliability analysis was done on eight items tapping the two dimensions of brand image (i.e., perceived quality and esteem). This analysis revealed that coefficient alpha was 0.96 while inter-item correlations among the measurement items ranged between 0.70 and 0.90. Based on this eight-item scale, overall image of "Mentadent" was found to be 4.29 which was significantly higher than 4 ($t=2.14$, $p=0.035$). Respondents' perception of overall brand image for "Pepsodent" was 2.61, and was significantly lower than 4 ($t=-12.95$, $p=0.000$).

Additionally, factor analysis on the twelve-item scale showed that perceived quality and esteem dimensions of brand image loaded together on one factor while the personality dimension loaded on the second factor for both Mentadent and Pepsodent. Extracted variance for the first factor in the twelve-item scale for Mentadent was 61.4 percent, and it was 53.1 percent for Pepsodent. Extracted variance for the second factor was 12.8 percent for Mentadent, and it was 16.9 percent for Pepsodent. Factor analysis

on the eight-item scale showed that the extracted variance was 74.7 percent for Mentadent, and was 70.0 percent for Pepsodent.

Second measure of brand image was a one-item, seven-point scale measure that was also used in the pilot study. With respect to this one-item measure, respondents' perceptions of Mentadent's image was 4.87 and significantly higher than 4.0, the midpoint of the scale ($t=6.15$, $p=0.000$). Respondents' perception of Pepsodent's image was 2.88 and was significantly lower than 4.0 ($t=-8.45$, $p=0.000$). Independent sample t-tests also confirmed that Mentadent had a significantly higher image than Pepsodent ($t=10.21$, $p=0.000$). The correlations among the twelve-item scale, the eight-item scale, and one-item scale is presented in Table 4.4 below. All correlations were significant at $p=0.01$ level.

Table 4.4
Correlations among 12-Item, 8-Item, and 1-Item Brand Image Scales

	Mentadent		Pepsodent	
	8-item	1-item	8-item	1-item
12-item	0.955	0.735	0.926	0.650
8-item		0.632		0.612

Further analysis using ANOVA indicated that the image of Mentadent did not differ across cells for the twelve-item scale ($F_{3,94}=2.51$, $p=0.063$), for the eight-item scale ($F_{3,94}=2.44$, $p=0.069$), and for the one-item scale ($F_{3,94}=0.14$, $p=0.936$). Similarly the image of Pepsodent did not differ across cells for the twelve-item scale ($F_{3,84}=1.49$, $p=0.224$), for the eight-item scale ($F_{3,84}=1.32$, $p=0.273$), and for the one-item scale ($F_{3,84}=0.95$, $p=0.418$). Based on these results, it can be concluded that manipulation of

brand image was successful in terms of creating the intended perceived image differences in the experiment.

Hypotheses Test

Prior to testing the hypotheses, several ANOVAs and MANOVAs were conducted with different dependent variables. First, an ANOVA was conducted with "ad believability" as the dependent variable, while ad format, brand image, and attribute relevance were the independent variables. Second, a MANOVA was conducted with "counterarguments" and "negative tactics-related cognitions" as the dependent variables. Third, another ANOVA was conducted with "attitude toward the ad" as the dependent variable. Fourth, another MANOVA was conducted where "attitude toward the brand" and "purchase intention" were the dependent variables. Finally, an ANOVA was conducted with "search intention" as the dependent variable. Table 4.5 displays the correlations among the dependent variables.

Table 4.5
Correlations among the Dependent Variables

Dependent Variables	B	C.A.	TRC	A_{Ad}	A_{Br}	SI	PI
Believability	1						
C.A.	-0.32	1					
TRC	-0.06*	0.29	1				
A_{Ad}	0.45	-0.39	-0.16	1			
A_{Br}	0.62	-0.34	-0.16	0.58	1		
Search Intention	0.00*	0.07*	0.02*	-0.06*	-0.22	1	
Purchase Intention	0.56	-0.27	-0.11*	0.67	0.62	0.06*	1

B: Believability
C.A.: Counterarguments
TRC: Tactics-Related Cognitions
A_{Ad}: Attitude toward the Ad
A_{Br}: Attitude toward the Brand
SI: Search Intention
PI: Purchase Intention
* Not significant at 0.05 level.

Hypotheses Related to Ad Believability

Hypotheses 1a, 5a, and 8a relate to ad believability. Hypothesis 1a dealt with the main effect of ad format on ad believability and posited that WBC ads will be perceived as more believable compared to ABC ads. Hypothesis 5a posited that ABC ads will result in lower believability than WBC ads and the effect will be greater for low-image compared to high-image brands. Finally, hypothesis 8a proposed that ABC ads will be perceived as less believable than WBC ads and the effect will be greater for irrelevant compared to relevant attributes.

Table 4.6
Effects of Ad Format, Brand Image, and Attribute Relevance on Ad Believability -
Main Study

Source	F-value	Sig.	d.f.
Main Effects			
Ad Format (AF)	16.82	0.000	1
Brand Image (BI)	24.71	0.000	1
Attribute Relevance (AR)	9.31	0.003	1
2-way Interactions			
AFxBI	8.53	0.004	1
AFxAR	0.28	0.599	1
BFxAR	2.34	0.128	1
3-way Interaction			
AFxBIxAR	5.14	0.025	1
Residual			178

The ANOVA results presented in Table 4.6 indicates that there is a significant three-way interaction ($F_{1,178}=5.14$, $p=0.025$). The presence of a three-way interaction requires the two-way interactions to be interpreted within each level of the appropriate factors. Also, with the presence of a three-way interaction, the overall main effects can not be examined. However, as the two-way interactions were interpreted within each level of appropriate conditions, it was found that some of the two-way interactions were not significant while the main effect of ad format was significant. Therefore, the main

effect hypotheses were interpreted when the two-way interactions were not significant. The findings about the main effect hypotheses are reported after the appropriate interaction effects are discussed.

Interaction Effects: Hypothesis 5a deals with the interaction of ad format and brand image. Because of the presence of a three-way interaction, the results of this hypothesis were interpreted within each level of attribute relevance (i.e., relevance versus irrelevance conditions). Similarly, since H8a deals with the interaction of ad format and attribute relevance, the results of this hypothesis were interpreted within each level of brand image (i.e., high-image versus low-image conditions).

In order to test H5a, two ANOVAs were conducted. First ANOVA was performed with the data consisting of only the respondents who were exposed to relevant attributes in the ads. Second ANOVA involved the respondents who were exposed to irrelevant attributes in the ads. When the attributes used in the ads were relevant, the two-way interaction between the ad format and the brand image was significant ($F_{1,88}=14.98, p=0.000$).

Further analysis showed that, for the attribute relevance condition, there was a significant difference ($t=5.01, p=0.000$) in ad believability between WBC ads (mean=4.60) and ABC ads (mean=3.27) when those ads were used by a low-image brand. Again under the attribute relevance condition, there was no significant difference ($t=-0.80, p=0.428$) in ad believability between WBC ads (mean=4.80) and ABC ads (mean=5.05) when those ads were used by a high-image brand. As shown in Figure 4.1, H5a is supported under the attribute relevance condition.

Figure 4.1
Effect of Ad Format and Brand Image on Ad Believability -
Attribute Relevance Condition

When the attributes used in the ads were irrelevant, the two-way interaction between the ad format and the brand image was not significant ($F_{1,90}=0.20$, $p=0.660$). Further analysis showed that, for the attribute irrelevance condition, there was a significant difference ($t=2.26$, $p=0.029$) in ad believability between WBC ads (mean=4.10) and ABC ads (mean=3.30) when those ads were used by a low-image brand.

Again under the attribute irrelevance condition, there was a significant difference ($t=2.12$, $p=0.039$) in ad believability between WBC ads (mean=4.53) and ABC ads (mean=3.92) when those ads were used by a high-image brand. As shown in Figure 4.2, H5a could not be supported under the attribute irrelevance condition. When only irrelevant attributes were used in the ads, the difference between WBC and ABC

ads did not get significantly greater for low-image brands. Although the direction of the relationship was consistent with the hypothesis, it was not significant. In this respect, H5a could only be partially supported for the attribute irrelevance condition.

Figure 4.2
Effect of Ad Format and Brand Image on Ad Believability -
Attribute Irrelevance Condition

Hypothesis 8a was also tested by two ANOVAs. First ANOVA was performed with the data consisting of only the respondents who were exposed to an ad promoting a high-image brand. Second ANOVA involved the respondents who were exposed to an ad promoting a low-image brand. When the brand image was high, the two-way interaction between the ad format and attribute relevance was significant ($F_{1,94}=4.12$, $p=0.045$). Further analysis showed that, for the high-image condition, there was a significant difference ($t=2.12$, $p=0.039$) in ad believability between WBC ads (mean=4.53) and ABC ads (mean=3.92) when those ads used irrelevant attributes.

Again under the high-image condition, there was no significant difference ($t=-0.80$, $p=0.428$) in ad believability between WBC ads (mean=4.80) and ABC ads (mean=5.05) when those ads used relevant attributes. As shown in Figure 4.3, H8a was supported under the high-image condition.

When the brand image was low, the two-way interaction between the ad format and the attribute relevance was not significant ($F_{1,84}=1.44$, $p=0.234$). Further analysis showed that, for the low-image condition, there was a significant difference ($t=2.26$, $p=0.029$) in ad believability between WBC ads (mean=4.10) and ABC ads (mean=3.30) when those ads used irrelevant attributes. However, under the low-image condition, there was also a significant difference ($t=5.01$, $p=0.000$) in ad believability between WBC ads (mean=4.6) and ABC ads (mean=3.27) when those ads used relevant attributes.

Figure 4.3
Effect of Ad Format and Attribute Relevance on Ad Believability -
High Brand Image Condition

As shown in Figure 4.4, H8a could not be supported under the low-image condition. Under the low-image condition, the difference between WBC and ABC ads for ad believability was not significantly greater when irrelevant attributes are used. Contrary to H8a, the difference between WBC and ABC ads for ad believability was greater when relevant attributes were used. As shown in Figure 4.4, when a low-image brand used an ABC ad, the use of relevant or irrelevant attributes did not make any difference in terms of ad believability. However, when a low-image brand used a WBC ad, the use of irrelevant attributes lowered the ad believability.

Figure 4.4
Effect of Ad Format and Attribute Relevance on Ad Believability -
Low Brand Image Condition

Main Effects: Because of the lack of a significant interaction effect of ad format and brand image on ad believability under attribute irrelevance condition, the main effect of ad format on ad believability could be examined. H1a proposed that the WBC ads

would result in higher ad believability than the ABC ads. Under the attribute irrelevance condition, the independent sample t-test revealed that the difference of ad believability between the WBC ads (mean=4.32) and the ABC ads (mean=3.67) was significant ($t=2.84$, $p=0.005$).

Likewise, because of the lack of a significant interaction effect between ad format and attribute relevance, the main effect of ad format on ad believability could be tested only under low-image condition. Independent sample t-test indicated that, under the low-image condition, the WBC ads (mean=4.33) were significantly more believable ($t=4.77$, $p=0.000$) than the ABC ads (mean=3.28). These findings support H1a under attribute irrelevance and low-image conditions.

Hypotheses Related to Counterarguments and Tactics-Related Cognitions

Hypotheses 1b, 1c, 5b, 5c, 8b, and 8c were about the main and interaction effects of ad format, brand image, and attribute relevance on counterarguments and negative tactics-related cognitions. Hypotheses 1b and 1c proposed that WBC ads will result in fewer counterarguments and negative tactics-related cognitions compared to ABC ads, respectively (i.e., main effect of ad format). Hypotheses 5b and 5c posited that ABC ads will result in more counterarguments and negative tactics-related cognitions than WBC ads and the effect will be greater for low-image compared to high-image brands (i.e., interaction effect of ad format and brand image). Finally, hypotheses 8b and 8c argued that ABC ads will result in more counterarguments and negative tactics-related cognitions than WBC ads and the effect will be greater for irrelevant compared to relevant attributes (i.e., interaction effect of ad format and attribute relevance).

The results of the MANOVA (see Table 4.7) showed that there was a significant three-way interaction effect on counterarguments and tactics-related cognitions (Wilks' Lambda=0.950, $F=4.64$, $p=0.011$). While the multivariate effect of the three-way interaction was significant, the univariate analysis revealed that the three-way interaction was only significant for counterarguments ($F_{1,178}=9.27$, $p=0.003$), but not for negative-tactics related cognitions ($F_{1,178}=0.41$, $p=0.521$).

Table 4.7
Effects of Ad Format, Brand Image, and Attribute Relevance on
Counterarguments and Tactics-Related Cognitions - Main Study

Source	Multivariate			Univariate F-values	
	Wilks' Lambda	F-values (Sig.)	d.f.	Counterarguments	Tactics-Related Cognitions
Main Effects					
Ad Format (AF)	0.956	4.09 (0.018)	1	7.97 (0.005)	0.10 (0.752)
Brand Image (BI)	0.980	1.79 (0.170)	1	2.34 (0.128)	2.29 (0.132)
Attribute Relevance (AR)	0.907	9.08 (0.000)	1	16.65 (0.000)	0.00 (0.949)
2-way Interactions					
AfxBI	0.991	0.84 (0.434)	1	0.46 (0.500)	1.58 (0.211)
AfxAR	0.995	0.404 (0.668)	1	0.00 (0.999)	0.75 (0.388)
BixAR	0.978	1.99 (0.140)	1	1.23 (0.269)	3.64 (0.058)
3-way Interaction					
AfxBixAR	0.950	4.64 (0.011)	1	9.27 (0.003)	0.41 (0.521)
Residual			178		

Because of the presence of a significant three-way interaction effect, hypotheses 5b, 5c, 8b, and 8c were interpreted within each level of the appropriate factors. Similar to the analysis procedure followed to test the hypotheses about ad believability, H5b and H5c were analyzed under two conditions of attribute relevance. Again, the first

MANOVA was performed with the data consisting of only the respondents who were exposed to relevant attributes in the ads, while the second MANOVA involved the respondents who were exposed to irrelevant attributes in the ads. When the attributes used in the ads were relevant, the multivariate effect of two-way interaction between the ad format and the brand image was significant (Wilks' Lambda=0.927, $F=3.42$, $p=0.037$). The univariate analysis revealed that this significant multivariate effect was attributable only to the number of counterarguments ($F_{1,91}=6.54$, $p=0.012$). The univariate effect of an interaction between ad format and brand image on negative tactics-related cognitions was not significant ($F_{1,91}=1.75$, $p=0.189$).

Interaction Effects: Further analysis showed that, for the attribute relevance condition, there is a significant difference ($t=-3.65$, $p=0.001$) in the number of counterarguments between WBC ads (mean=0.24) and ABC ads (mean=1.46) when those ads were used by a low-image brand. Again under the attribute relevance condition, there was no significant difference ($t=0.40$, $p=0.695$) in the number of counterarguments between WBC ads (mean=0.44) and ABC ads (mean=0.27) when those ads were used by a high-image brand. As shown in Figure 4.5, H5b was supported under the attribute relevance condition.

In order to test H5c, the interaction effect between the ad format and the brand image on negative tactics-related cognitions was analyzed. For the attribute relevance condition, there was no significant difference ($t=-0.71$, $p=0.484$) in the negative tactics-related cognitions between WBC ads (mean=0.38) and ABC ads (mean=0.54) when those ads were used by a low-image brand.

Figure 4.5
Effect of Ad Format and Brand Image on Counterarguments -
Attribute Relevance Condition

Again under the attribute relevance condition, there was no significant difference ($t=1.15$, $p=0.247$) in the negative tactics-related cognitions between WBC ads (mean=0.20) and ABC ads (mean=-0.09) when those ads were used by a high-image brand. As shown in Figure 4.6, H5c could not be supported under the attribute relevance condition, although the effect was consistent with the hypothesized direction.

Hypotheses 5b and 5c were then tested under the attribute irrelevance condition. When the attributes used in the ads were irrelevant, the multivariate effect of two-way interaction between the ad format and the brand image was not significant (Wilks' Lambda=0.958, $F=1.93$, $p=0.151$). However, the univariate analysis indicated that the two-way interaction between the ad format and the brand image was marginally significant for the number of counterarguments ($F_{1,90}=4.48$, $p=0.088$). The two-way

interaction did not have a significant effect on negative tactics-related cognitions ($F_{1,90}=0.12$, $p=0.661$).

Figure 4.6
Effect of Ad Format and Brand Image on Negative Tactics-Related Cognitions -
Attribute Relevance Condition

Further analysis showed that, for the attribute irrelevance condition, there was no significant difference ($t=-0.23$, $p=0.817$) in the number of counterarguments between WBC ads (mean=1.37) and ABC ads (mean=1.44) when those ads were used by a low-image brand. However, under the attribute irrelevance condition, there was a significant difference ($t=-2.71$, $p=0.009$) in the number of counterarguments between WBC ads (mean=0.84) and ABC ads (mean=1.81) when those ads were used by a high-image brand. As shown in Figure 4.7, H5b could not be supported under the attribute irrelevance condition. The results indicate that the ad format did not make any

significant difference in terms of creating counterarguments as long as low-image brands used irrelevant attributes.

Figure 4.7
Effect of Ad Format and Brand Image on Counterarguments -
Attribute Irrelevance Condition

Next, hypothesis 5c was tested under the attribute irrelevance condition. For the attribute irrelevance condition, there was no significant difference ($t=-1.24$, $p=0.221$) in the negative tactics-related cognitions between WBC ads (mean=0.12) and ABC ads (mean=0.33) when those ads were used by a low-image brand. Also, under the attribute irrelevance condition, there was no significant difference ($t=-0.26$, $p=0.800$) in the negative tactics-related cognitions between WBC ads (mean=0.24) and ABC ads (mean=0.31) when those ads were used by a high-image brand. As shown in Figure 4.8, H5c could not be supported under the attribute irrelevance condition, although the effect was consistent with the hypothesized direction.

Hypotheses 8b and 8c were analyzed under the two brand image conditions, namely, high-image and low-image. When the brand image was high, the multivariate effect of two-way interaction between the ad format and the attribute relevance was not significant (Wilks' Lambda=0.956, $F=2.12$, $p=0.126$). However, the univariate analysis indicated that the two-way interaction between the ad format and the attribute relevance was significant for the number of counterarguments ($F_{1,94}=4.25$, $p=0.042$). The two-way interaction did not have a significant effect on negative tactics-related cognitions ($F_{1,94}=0.95$, $p=0.333$).

Figure 4.8
Effect of Ad Format and Brand Image on Negative Tactics-Related Cognitions -
Attribute Irrelevance Condition

Further analysis revealed that, for the high-image condition, there was a significant difference ($t=-2.71$, $p=0.009$) in the number of counterarguments between WBC ads (mean=0.84) and ABC ads (mean=1.81) when those ads used irrelevant

attributes. However, there was no significant difference ($t=0.40$, $p=0.695$) in the number of counterarguments between WBC ads (mean=0.44) and ABC ads (mean=0.27) when those ads used relevant attributes. As shown in Figure 4.9, H8b was supported under the high-image condition.

Figure 4.9
Effect of Ad Format and Brand Image on Counterarguments -
High Brand Image Condition

Under the high-image condition, there was no significant difference ($t=1.15$, $p=0.257$) in the tactics related cognitions between WBC ads (mean=0.20) and ABC ads (mean=-0.09) when those ads used relevant attributes. Similarly, there was no significant difference ($t=-0.26$, $p=0.800$) in the tactics-related cognitions between WBC ads (mean=0.24) and ABC ads (mean=0.31) when those ads used irrelevant attributes. As shown in Figure 4.10, H8c could not be supported under the high-image condition.

Figure 4.10
Effect of Ad Format and Brand Image on Negative Tactics-Related Cognitions - High Brand Image Condition

When the brand image was low, the multivariate effect of two-way interaction between the ad format and the attribute relevance was marginally significant (Wilks' Lambda=0.939, $F=2.70$, $p=0.073$). However, the univariate analysis indicated that the two-way interaction between the ad format and the attribute relevance was significant for the number of counterarguments ($F_{1,84}=5.33$, $p=0.023$). The two-way interaction did not have a significant effect on negative tactics-related cognitions ($F_{1894}=0.03$, $p=0.855$).

Further analysis revealed that, for the low-image condition, there was a significant difference ($t=-3.65$, $p=0.001$) in the number of counterarguments between WBC ads (mean=0.24) and ABC ads (mean=1.46) when those ads used relevant attributes. However, there was no significant difference ($t=-0.23$, $p=0.817$) in the

number of counterarguments between WBC ads (mean=1.36) and ABC ads (mean=1.44) when those ads used irrelevant attributes. These findings are opposite to the hypothesized direction. As shown in Figure 4.11, H8b could not be supported under the low-image condition.

Figure 4.11
Effect of Ad Format and Brand Image on Counterarguments -
Low Brand Image Condition

Under the low-image condition, there was no significant difference ($t=-0.71$, $p=0.484$) in the tactics related cognitions between WBC ads (mean=0.38) and ABC ads (mean=0.54) when those ads used relevant attributes. Similarly, there was no significant difference ($t=-1.24$, $p=0.221$) in the tactics-related cognitions between WBC ads (mean=0.12) and ABC ads (mean=0.33) when those ads used irrelevant attributes. As shown in Figure 4.12, H8c could not be supported under the low-image condition.

Figure 4.12
Effect of Ad Format and Brand Image on Negative Tactics-Related Cognitions -
Low Brand Image Condition

Main Effects: Because of the lack of a significant interaction effect of ad format and brand image under attribute irrelevance condition, independent sample t-test was conducted to test H1b and H1c. H1b posited that the WBC ads would result in less number of counterarguments than the ABC ads, while H1c posited the same effect for negative tactics-related cognitions. The results showed that the WBC ($\text{mean}_{CA}=1.10$, $\text{mean}_{TRC}=0.18$) ads resulted in less number of counterarguments and negative tactics-related cognitions than the ABC ads ($\text{mean}_{CA}=1.66$, $\text{mean}_{TRC}=0.32$). The difference was significant for counterarguments ($t=-2.19$, $p=0.031$) while it was not significant for tactics-related cognitions ($t=-0.85$, $p=0.398$). Hence, H1b was supported under the attribute irrelevance condition, while H1c could not be supported.

Independent sample t-tests were also conducted to test H1b and H1c under the low-image condition. The results showed that the WBC ($\text{mean}_{\text{CA}}=0.85$, $\text{mean}_{\text{TRC}}=0.24$) ads resulted in less number of counterarguments and negative tactics-related cognitions than the ABC ads ($\text{mean}_{\text{CA}}=1.45$, $\text{mean}_{\text{TRC}}=0.45$). The difference was significant for counterarguments ($t=-2.36$, $p=0.021$) while it was not significant for tactics-related cognitions ($t=-1.48$, $p=0.140$). Hence, H1b was supported under the low-image condition, while H1c could not be supported.

Hypotheses Related to Attitude toward the Ad

Hypotheses 2a, 6a, and 9a were about the main and interaction effects of ad format, brand image, and attribute relevance on attitude toward the ad (A_{Ad}). Hypothesis 2a posited that WBC ads will result in higher A_{Ad} than ABC ads, respectively (i.e., main effect of ad format). Hypothesis 6a posited that ABC ads will result in lower A_{Ad} than WBC ads and the effect will be stronger for low-image compared to high-image brands (i.e., interaction effect of ad format and brand image).

Table 4.8
Effects of Ad Format, Brand Image, and Attribute Relevance on A_{Ad} - Main Study

Source	F-value	Sig.	d.f.
Main Effects			
Ad Format (AF)	1.79	0.183	1
Brand Image (BI)	32.26	0.000	1
Attribute Relevance (AR)	18.03	0.000	1
2-way Interactions			
AfxBI	2.58	0.110	1
AfxAR	2.81	0.095	1
BixAR	7.81	0.006	1
3-way Interaction			
AfxBixAR	4.68	0.032	1
Residual			178

Finally, hypotheses 9a argued that ABC ads will result in lower A_{Ad} than WBC ads and the effect will be stronger for irrelevant compared to relevant attributes (i.e., interaction effect of ad format and attribute relevance).

The results of ANOVA presented in Table 4.8 indicates that there was a significant three-way interaction ($F_{1,178}=4.68$, $p=0.032$). Again, the presence of a three-way interaction makes the interpretation of the main effects not useful and also requires the two-way interactions to be interpreted within each level of the appropriate factors.

Interaction Effects: Hypothesis 6a deals with the interaction effect of ad format and brand image on A_{Ad} . Because of the presence of a three-way interaction, the results of this hypothesis were interpreted within each level of attribute relevance (i.e., relevance versus irrelevance conditions). Similarly, since H9a deals with the interaction effect of ad format and attribute relevance on A_{Ad} , the results of this hypothesis were interpreted within each level of brand image (i.e., high-image versus low-image conditions).

Hypothesis 6a was tested by two ANOVAs. Similar to the procedure used for the testing of previous hypotheses, first ANOVA was performed with the data consisting of only the respondents who were exposed to relevant attributes in the ads. Second ANOVA involved the respondents who were exposed to irrelevant attributes in the ads. When the attributes used in the ads were relevant, the two-way interaction between the ad format and the brand image was significant ($F_{1,88}=6.63$, $p=0.012$). Further analysis showed that, for the attribute relevance condition, there was a marginally significant difference ($t=1.92$, $p=0.061$) in A_{Ad} between WBC ads (mean=3.13) and ABC ads (mean=2.56) when those ads were used by a low-image brand.

Again under the attribute relevance condition, there was a marginally significant difference ($t=-1.79$, $p=0.081$) in A_{Ad} between WBC ads (mean=3.91) and ABC ads (mean=4.59) when those ads were used by a high-image brand. Under the relevant attribute condition, ABC ads used by a high-image brand resulted in higher A_{Ad} than WBC ads. However, as proposed in H6a, this high level of A_{Ad} declined when these ads were used by a low-image brand. As shown in Figure 4.13, H6a received mixed support under the attribute relevance condition.

Figure 4.13
Effect of Ad Format and Brand Image on A_{Ad} -
Attribute Relevance Condition

When the attributes used in the ads were irrelevant, the two-way interaction between the ad format and the brand image on A_{Ad} was not significant ($F_{1,90}=0.17$, $p=0.684$). Further analysis showed that, for the attribute irrelevance condition, there

was no significant difference ($t=1.09$, $p=0.281$) in A_{Ad} between WBC ads (mean=2.81) and ABC ads (mean=2.40) when those ads were used by a low-image brand. However, there was a significant difference ($t=2.18$, $p=0.034$) in A_{Ad} between WBC ads (mean=3.38) and ABC ads (mean=2.79) when those ads were used by a high-image brand. As shown in Figure 4.14, H6a could not be supported under the attribute irrelevance condition. When only irrelevant attributes used in the ads, the difference between WBC and ABC ads did not get significantly greater for low-image brands, which was contrary to H6a.

Figure 4.14
Effect of Ad Format and Brand Image on A_{Ad} -
Attribute Irrelevance Condition

Hypothesis 9a was also tested by two ANOVAs. First ANOVA was performed with the data consisting of only the respondents who were exposed to an ad promoting a

high-image brand. Second ANOVA involved the respondents who were exposed to an ad promoting a low-image brand. When the brand image was high, the two-way interaction between the ad format and the attribute relevance on A_{Ad} was significant ($F_{1,94}=7.59, p=0.007$).

Further analysis showed that, for the high-image condition, there is a significant difference ($t=2.18, p=0.034$) in A_{Ad} between WBC ads (mean=3.38) and ABC ads (mean=2.79) when those ads used irrelevant attributes. However, under the high-image condition, there was only a marginally significant difference ($t=-1.79, p=0.081$) in A_{Ad} between WBC ads (mean=3.91) and ABC ads (mean=4.59) when those ads used relevant attributes. Overall, these results show that the use of irrelevant attributes lowered the A_{Ad} . As shown in Figure 4.15, H9a was supported under the high-image condition.

Figure 4.15
Effect of Ad Format and Attribute Relevance on A_{Ad} -
High Brand Image Condition

When the brand image was low, the two-way interaction between the ad format and the attribute relevance on A_{Ad} was not significant ($F_{1,84}=0.12$, $p=0.734$). Further analysis showed that, for the low-image condition, there was no significant difference ($t=1.09$, $p=0.281$) in A_{Ad} between WBC ads (mean=2.81) and ABC ads (mean=2.40) when those ads used irrelevant attributes. However, under the low-image condition, there was a marginally significant difference ($t=1.92$, $p=0.061$) in A_{Ad} between WBC ads (mean=3.13) and ABC ads (mean=2.56) when those ads used relevant attributes.

Figure 4.16
Effect of Ad Format and Attribute Relevance on A_{Ad} -
Low Brand Image Condition

As shown in Figure 4.16, H9a could not be supported under the low-image condition. Under the low-image condition, the difference between WBC and ABC ads for A_{Ad} did not get significantly greater when irrelevant attributes were used. Contrary to H9a, the difference between WBC and ABC ads for A_{Ad} was marginally greater when relevant attributes were used.

Main Effects: As the interaction effect between ad format and brand image was not significant under attribute irrelevance condition, H2a could be tested by an independent sample t-test. When irrelevant attributes were used, the main effect of ad format on A_{Ad} was significant ($t=2.04$, $p=0.044$). Independent sample t-test revealed that the WBC ads (mean=3.10) resulted in higher A_{Ad} than the ABC ads (mean=2.63). This result supports H2a under the attribute irrelevance condition.

H2a was also tested under low-image condition because of the lack of a significant interaction effect between ad format and attribute relevance on A_{Ad} . Independent sample t-test showed that the WBC ads (mean=2.96) resulted in marginally higher A_{Ad} than ($t=1.98$, $p=0.051$) the ABC ads (mean=2.49). Based on this result, H2a could be marginally supported under low-image condition.

Hypotheses Related to Attitude toward the Brand and Purchase Intention

Hypotheses 2b, 3b, 6b, 7b, 9b, and 10b were about the main and interaction effects of ad format, brand image, and attribute relevance on attitude toward the brand (A_{Br}) and purchase intention of respondents. Hypotheses 2b and 3b proposed that WBC ads will result in higher A_{Br} and purchase intention compared to ABC ads, respectively (i.e., main effect of ad format). Hypotheses 6b and 7b posited that ABC ads will result in lower A_{Br} and purchase intention than WBC ads and the effect will be greater for low-image compared to high-image brands (i.e., interaction effect of ad format and brand image). Finally, hypotheses 9b and 10b argued that ABC ads will result in lower A_{Br} and purchase intention than WBC ads and the effect will be greater for irrelevant compared to relevant attributes (i.e., interaction effect of ad format and attribute relevance).

The results of the MANOVA (see Table 4.9) showed that there was a significant three-way interaction effect on A_{Br} and purchase intention (Wilks' Lambda=0.937, $F=5.93$, $p=0.003$). Additionally, the univariate analysis revealed that the three-way interaction was significant both for A_{Br} ($F_{1,178}=4.63$, $p=0.033$) and purchase intention ($F_{1,178}=11.45$, $p=0.001$). Because of the presence of a significant three-way interaction effect, hypotheses 6b, 7b, 9b, and 10b were interpreted within each level of the appropriate factors.

Table 4.9
Effects of Ad Format, Brand Image, and Attribute Relevance on Attitude toward the Brand and Purchase Intention - Main Study

Source	Multivariate			Univariate F-values	
	Wilks' Lambda	F-values (Sig.)	d.f.	A_{Br}	Purchase Intention
Main Effects					
Ad Format (AF)	0.901	9.69 (0.000)	1	19.17 (0.000)	6.25 (0.013)
Brand Image (BI)	0.754	28.85 (0.000)	1	42.06 (0.000)	42.32 (0.000)
Attribute Relevance (AR)	0.858	14.61 (0.000)	1	27.91 (0.000)	12.11 (0.001)
2-way Interactions					
AfxBI	0.984	1.48 (0.230)	1	2.77 (0.098)	1.37 (0.243)
AfxAR	0.973	0.250 (0.085)	1	4.69 (0.032)	2.25 (0.136)
BixAR	0.975	2.28 (0.105)	1	3.21 (0.075)	3.46 (0.065)
3-way Interaction					
AfxBixAR	0.937	5.93 (0.003)	1	4.63 (0.033)	11.45 (0.001)
Residual			178		

Interaction Effects: Similar to the analysis procedure followed to test the other hypotheses, H6b and H7b were analyzed under two conditions of attribute relevance. Again, the first MANOVA was performed with the data consisting of only the

respondents who were exposed to relevant attributes in the ads, while the second MANOVA involved the respondents who were exposed to irrelevant attributes in the ads. When the attributes used in the ads were relevant, the multivariate effect of two-way interaction between the ad format and the brand image was significant (Wilks' Lambda=0.859, $F=7.16$, $p=0.001$). The univariate analysis revealed that this significant multivariate effect was attributable to both of the dependent variables, A_{Br} ($F_{1,88}=7.36$, $p=0.002$) and purchase intention ($F_{1,88}=14.54$, $p=0.002$).

Figure 4.17
Effect of Ad Format and Brand Image on A_{Br} -
Attribute Relevance Condition

Further analysis showed that, for the attribute relevance condition, there was a significant difference ($t=3.25$, $p=0.002$) in the A_{Br} between WBC ads (mean=4.42) and ABC ads (mean=3.52) when those ads were used by a low-image brand. However,

under the attribute relevance condition, there was no significant difference ($t=-1.01$, $p=0.320$) in the A_{Br} between WBC ads (mean=5.08) and ABC ads (mean=5.32) when those ads were used by a high-image brand. As shown in Figure 4.17, H6b was supported under the attribute relevance condition.

In order to test H7b, the interaction effect between the ad format and the brand image on purchase intention was analyzed. For the attribute relevance condition, there was a significant difference ($t=3.43$, $p=0.001$) in the purchase intention of the respondents who were exposed to WBC ads (mean=3.00) and ABC ads (mean=2.03) when those ads were used by a low-image brand.

Figure 4.18
Effect of Ad Format and Brand Image on Purchase Intention
- Attribute Relevance Condition

Again under the attribute relevance condition, there was no significant difference ($t=-1.50$, $p=0.142$) in the purchase intention of the respondents who were exposed to WBC ads (mean=3.67) and ABC ads (mean=4.29) when those ads were

used by a high-image brand. As shown in Figure 4.18, H7b was supported under the attribute relevance condition.

Hypotheses 6b and 7b were then tested under the attribute irrelevance condition. When the attributes used in the ads were irrelevant, the multivariate effect of two-way interaction between the ad format and the brand image on A_{Br} and purchase intention was not significant (Wilks' Lambda=0.968, $F=1.49$, $p=0.231$). The univariate analysis also indicated that the two-way interaction between the ad format and the brand image was not significant for A_{Br} ($F_{1,90}=0.10$, $p=0.758$), and purchase intention ($F_{1,90}=2.57$, $p=0.112$).

Figure 4.19
Effect of Ad Format and Brand Image on A_{Br} -
Attribute Irrelevance Condition

Further analysis showed that, for the attribute irrelevance condition, there was a significant difference ($t=2.48$, $p=0.017$) in the A_{Br} between WBC ads (mean=3.90) and ABC ads (mean=3.00) when those ads were used by a low-image brand. Similarly, under the attribute irrelevance condition, there was a significant difference ($t=3.43$, $p=0.001$) in the A_{Br} between WBC ads (mean=4.67) and ABC ads (mean=3.63) when those ads were used by a high-image brand. As shown in Figure 4.19, H6b could not be supported under the attribute irrelevance condition. Despite the differences in WBC and ABC ads with respect to A_{Br} , there was no significant interaction effect causing these differences.

Figure 4.20
Effect of Ad Format and Brand Image on Purchase Intention
- Attribute Irrelevance Condition

Next, hypothesis 7b was tested under the attribute irrelevance condition. For the attribute irrelevance condition, there was no significant difference ($t=0.83$, $p=0.414$) in the purchase intention of the respondents for WBC ads (mean=2.39) and ABC ads (mean=2.07) when those ads were used by a low-image brand. Under the attribute irrelevance condition, however, there was a significant difference ($t=3.54$, $p=0.001$) in the purchase intention of the respondents for WBC ads (mean=3.59) and ABC ads (mean=2.50) when those ads were used by a high-image brand. As shown in Figure 4.20, H7b could not be supported under the attribute irrelevance condition. While the results were contrary to the hypothesized effect, they suggest that irrelevant attributes should not be used by low-image brands at all. Even when those irrelevant attributes were used in a WBC ad, the purchase intention dropped significantly. However, high-image brands can use irrelevant attributes as long as they are used within a WBC ad.

Hypotheses 9b and 10b were analyzed under the two brand image conditions, namely, high-image and low-image. When the brand image was high, the multivariate effect of two-way interaction between the ad format and the attribute relevance on A_{Br} and purchase intention was significant (Wilks' Lambda=0.864, $F=7.34$, $p=0.001$). Additionally, the univariate analysis indicated that the two-way interaction between the ad format and the attribute relevance was significant for both of the dependent variables, A_{Br} ($F_{1,94}=10.81$, $p=0.001$) and purchase intention ($F_{1,94}=11.17$, $p=0.001$).

Further analysis revealed that, for the high-image condition, there was a significant difference ($t=3.43$, $p=0.001$) in the respondents' A_{Br} when exposed to WBC ads (mean=4.67) and ABC ads (mean=3.63) used by a low-image brand. However, there was no significant difference ($t=-1.01$, $p=0.320$) in the A_{Br} when respondents were

exposed to WBC ads (mean=5.08) and ABC ads (mean=5.32) used by a high-image brand. As shown in Figure 4.21, H9b was supported under the high-image condition.

Figure 4.21
Effect of Ad Format and Attribute Relevance on A_{Br} -
High Brand Image Condition

Under the high-image condition, there was a significant difference ($t=3.54$, $p=0.001$) in the purchase intentions of the respondents when they were exposed to WBC ads (mean=3.59) and ABC ads (mean=2.50) using irrelevant attributes. On the other hand, there was no significant difference ($t=-1.50$, $p=0.142$) in the purchase intentions of the respondent when WBC ads (mean=3.67) and ABC ads (mean=4.29) used relevant attributes. As shown in Figure 4.22, H10b was supported under the high-image condition.

When the brand image was low, the multivariate effect of two-way interaction between the ad format and the attribute relevance on A_{Br} and purchase intention was not

significant (Wilks' Lambda=0.972, $F=1.20$, $p=0.306$). The univariate analysis also indicated that the two-way interaction between the ad format and the attribute relevance was not significant for the A_{Br} ($F_{1,84}=0.00$, $p=0.993$), and the respondents' purchase intention ($F_{1,84}=1.97$, $p=0.164$).

Figure 4.22
Effect of Ad Format and Attribute Relevance on Purchase Intention
- High Brand Image Condition

Further analysis revealed that, for the low-image condition, there was a significant difference ($t=2.48$, $p=0.017$) in the A_{Br} when respondents were exposed to WBC ads (mean=3.90) and ABC ads (mean=3.00) using irrelevant attributes. Similarly, there was a significant difference ($t=3.25$, $p=0.002$) in the A_{Br} when respondents were exposed to WBC ads (mean=4.42) and ABC ads (mean=3.52) using relevant attributes. As shown in Figure 4.23, H9b could not be supported under the

low-image condition. Both ad format and attribute relevance had significant main effects on A_{Br} .

Figure 4.23
Effect of Ad Format and Attribute Relevance on A_{Br} -
Low Brand Image Condition

Under the low-image condition, there was no significant difference ($t=0.83$, $p=0.414$) in the purchase intention of the respondents when they were exposed to WBC ads (mean=2.39) and ABC ads (mean=2.07) using irrelevant attributes. On the other hand, there was a significant difference ($t=3.43$, $p=0.001$) in the purchase intention of the respondents when they were exposed to WBC ads (mean=3.00) and ABC ads (mean=2.03) using relevant attributes. As shown in Figure 4.24, H10b could not be supported under the low-image condition.

Figure 4.24
Effect of Ad Format and Attribute Relevance on Purchase Intention
- Low Brand Image Condition

Main Effects: Based on the lack of significant interaction effects of ad format and brand image on A_{Br} and purchase intention under attribute irrelevance condition, H2b and H3b were examined by conducting independent sample t-tests. H2b proposed that the WBC ads would result in higher A_{Br} than the ABC ads, while H3b argued that the WBC ads would also result in higher purchase intention than the ABC ads. The results revealed that A_{Br} and purchase intention were significantly higher (A_{Br} : $t=3.79$, $p=0.000$; PI: $t=2.59$, $p=0.011$) for the WBC ads ($mean_{A_{Br}}=4.29$, $mean_{PI}=2.97$) than the ABC ads ($mean_{A_{Br}}=3.37$, $mean_{PI}=2.33$). Therefore, H2b and H3b were supported under attribute irrelevance condition.

Because of the lack of two-way interaction of ad format and attribute relevance under low brand image condition, the main effects of ad format on A_{Br} and purchase

intention were also assessed under the low-image condition. Independent sample t-test results revealed that the ad format had a significant main effect on A_{Br} and purchase intention under low-image condition (A_{Br} : $t=3.66$, $p=0.000$; PI : $t=2.63$, $p=0.010$). The A_{Br} and the purchase intention were significantly higher for the WBC ads ($mean_{ABr}=4.14$, $mean_{PI}=2.67$) than the ABC ads ($mean_{ABr}=3.30$, $mean_{PI}=2.05$). These findings support H2b and H3b under low-image condition.

Hypotheses Related to Search Intention

Hypotheses 3a, 7a, and 10a were about the main and interaction effects of ad format, brand image, and attribute relevance on search intention. Hypothesis 3a posited that WBC ads will result in lower search intention than ABC ads, respectively (i.e., main effect of ad format). Hypothesis 7a posited that ABC ads will result in higher search intention than WBC ads and the effect will be stronger for low-image compared to high-image brands (i.e., interaction effect of ad format and brand image). Finally, hypotheses 10a argued that ABC ads will result in higher A_{Ad} than WBC ads and the effect will be stronger for irrelevant compared to relevant attributes (i.e., interaction effect of ad format and attribute relevance).

The results of ANOVA presented in Table 4.10 indicate that none of the effects was significant. While there was no significant result related to the hypotheses, some follow up analyses were conducted. The search intention for WBC ads was 3.71, while it was 3.75 for ABC ads, which were not different from each other at all. This result leads to the rejection of H3a.

In order to be consistent with the rest of the analysis, Hypotheses 7a and 10a were analyzed within each level of attribute relevance and brand image. Hypothesis 7a

deals with the interaction effect of ad format and brand image on search intention. This hypothesis is interpreted within each level of attribute relevance (i.e., relevance versus irrelevance conditions). Similarly, since H10a deals with the interaction effect of ad format and attribute relevance on search intention. This hypothesis is interpreted within each level of brand image (i.e., high-image versus low-image conditions).

Table 4.10
Effects of Ad Format, Brand Image, and Attribute Relevance on Search Intention - Main Study

Source	F-value	Sig.	d.f.
Main Effects			
Ad Format (AF)	0.02	0.882	1
Brand Image (BI)	1.24	0.267	1
Attribute Relevance (AR)	0.11	0.736	1
2-way Interactions			
AfxBI	0.73	0.394	1
AfxAR	0.14	0.707	1
BixAR	0.29	0.590	1
3-way Interaction			
AfxBixAR	0.12	0.735	1
Residual			178

Hypothesis 7a was tested by two ANOVAs. When the attributes used in the ads were relevant, the two-way interaction between the ad format and the brand image was not significant ($F_{1,88}=0.75$, $p=0.389$). Further analysis showed that, for the attribute relevance condition, there was no significant difference ($t=-0.85$, $p=0.398$) in respondents' search intention when they were exposed to WBC ads (mean=3.62) and ABC ads (mean=4.08) used by a low-image brand. Again under the attribute relevance condition, there was no significant difference ($t=0.35$, $p=0.726$) in respondents' search intention when they were exposed to WBC ads (mean=3.79) and ABC ads (mean=3.62) used by a high-image brand. While the interaction effect was not significant, it was in

the hypothesized direction. As shown in Figure 4.25, H7a could not be totally supported under the attribute relevance condition.

Figure 4.25
Effect of Ad Format and Brand Image on Search Intention -
Attribute Relevance Condition

When the attributes used in the ads were irrelevant, the two-way interaction between the ad format and the brand image on search intention was not significant ($F_{1,90}=0.13$, $p=0.722$). Further analysis showed that, for the attribute irrelevance condition, there was no significant difference ($t=-0.14$, $p=0.889$) in respondents' search intention when they were exposed to WBC ads (mean=3.87) and ABC ads (mean=3.94) used by a low-image brand. Similarly, there was no significant difference ($t=0.37$, $p=0.713$) in respondents' search intention when they were exposed to WBC ads (mean=3.56) and ABC ads (mean=3.36) used by a high-image brand. As shown in Figure 4.26, H7a could not be supported under the attribute irrelevance condition.

Figure 4.26
Effect of Ad Format and Brand Image on Search Intention -
Attribute Irrelevance Condition

Hypothesis 10a was also tested by two ANOVAs. When the brand image was high, the two-way interaction between the ad format and the attribute relevance on respondents' search intention was not significant ($F_{1,94}=0.00$, $p=0.978$). Further analysis showed that, for the high-image condition, there was no significant difference ($t=0.35$, $p=0.726$) in respondents' search intention when they were exposed to WBC ads (mean=3.79) and ABC ads (mean=3.60) using relevant attributes. Also, under the high-image condition, there was no significant difference ($t=0.37$, $p=0.713$) in respondents' search intention when they were exposed to WBC ads (mean=3.56) and ABC ads (mean=3.36) using irrelevant attributes.

Overall, these results also showed that the use of irrelevant attributes lowered the search intention, which was contrary to H10a. Also, WBC ads resulted in higher

search intention than ABC ads for high-image brands, which was again contrary to the hypothesized direction. As shown in Figure 4.27, H10a could not be supported under the high-image condition.

Figure 4.27
Effect of Ad Format and Attribute Relevance on Search Intention -
High Brand Image Condition

Finally, when the brand image was low, the two-way interaction between the ad format and the attribute relevance on search intention was not significant ($F_{1,84}=0.25$, $p=0.619$). Further analysis showed that, for the low-image condition, there was no significant difference ($t=-0.14$, $p=0.889$) in the respondents' search intentions when they were exposed to WBC ads (mean=3.87) and ABC ads (mean=3.94) using irrelevant attributes. Again, under the low-image condition, there was no significant difference ($t=-0.85$, $p=0.398$) in the respondents' search intention when they were exposed to WBC ads (mean=3.62) and ABC ads (mean=4.08) using relevant attributes.

As shown in Figure 4.28, H10a could not be supported under the low-image condition. Under the low-image condition, the difference between WBC and ABC ads for search intention did not get significantly greater when irrelevant attributes were used. Contrary to H10a, the difference between WBC and ABC ads for search intention was greater when relevant attributes were used.

Figure 4.28
Effect of Ad Format and Attribute Relevance on Search Intention -
Low Brand Image Condition

Hypotheses Related to the Mediation Effects of Ad Believability

Hypotheses 4a and 4b posited that ad believability would mediate the effect of independent variables on counterarguments and negative tactics-related cognitions. In order to test these hypotheses, several analyses were conducted (Baron and Kenny 1986). To test H4a, first an ANOVA was conducted with ad format as the independent variable and ad believability as the dependent variable. The second ANOVA used ad

format as the independent variable and counterarguments as the dependent variable. Next a bivariate regression was conducted to examine the relationship between ad believability and counterarguments. Finally, an ANCOVA was conducted with ad format as the independent variable, counterarguments as the dependent variable, and ad believability as the covariate. These tests were repeated for the ad format and brand image interaction as well as the interaction of ad format and attribute relevance in appropriate conditions. To test H4b, the same process described above was repeated with negative tactics-related cognitions as the dependent variable. Mediation effect of a variable is present when the significant effect of an independent variable is diminished or is no longer significant when a covariate is introduced.

The results of the first two ANOVAs testing H4a showed that ad format had a significant effect on ad believability ($F_{1,178}=16.82$, $p=0.000$) (see Table 4.6), and on counterarguments ($F_{1,178}=7.97$, $p=0.005$) (see Table 4.7). Next, the bivariate regression analysis revealed that ad believability significantly predicted the number of counterarguments ($\beta=-0.32$, $t=-4.50$, $p=0.000$). When ad believability was introduced as a covariate, the effect of ad format on counterarguments was not significant ($F_{1,183}=2.79$, $p=0.097$) while the effect of ad believability was significant ($F_{1,183}=15.49$, $p=0.000$). Together, these results display the presence of a mediation effect of ad believability between ad format and counterarguments supporting H4a.

As shown in Table 4.6, there was a significant three-way interaction effect on ad believability. Therefore, the hypothesis about whether ad believability mediates the relationship between the ad format and brand image interaction and counterarguments was tested within each level of attribute relevance. For the attribute relevance

condition, as reported in the "Hypotheses Related to Ad Believability" section, the two-way interaction between the ad format and brand image on ad believability was significant ($F_{1,88}=14.98$, $p=0.000$). Similarly, the interaction effect of ad format and brand image on counterarguments was significant ($F_{1,88}=6.54$, $p=0.012$). The bivariate regression analysis showed that ad believability significantly predicted the number of counterarguments ($\beta=-0.46$, $t=-4.90$, $p=0.000$) under the attribute relevance condition. When ad believability was introduced as a covariate, the interaction effect between ad format and brand image on counterarguments was not significant ($F_{1,87}=1.54$, $p=0.218$). These results support H4a and indicate that ad believability mediates the relationship between the interaction of ad format and brand image, and counterarguments.

Under the attribute irrelevance condition, the two-way interaction between the ad format and brand image on ad believability was not significant ($F_{1,90}=0.20$, $p=0.660$). Given the lack of interaction effect of ad format and brand image on ad believability under the attribute irrelevance condition, no further tests were conducted.

Next, the hypothesis about whether ad believability mediates the relationship between the ad format and attribute relevance interaction and counterarguments was tested within each level of brand image. For the high-image condition, again as reported in the "Hypotheses Related to Ad Believability" section, the two-way interaction between the ad format and attribute relevance on ad believability was significant ($F_{1,94}=4.12$, $p=0.045$). The interaction effect of ad format and attribute relevance on counterarguments was also significant ($F_{1,94}=4.25$, $p=0.042$). The bivariate regression analysis showed that ad believability had a significant effect on counterarguments ($\beta=-0.25$, $t=-2.57$, $p=0.012$) under the high-image condition.

However, when ad believability was introduced as a covariate, the interaction effect between ad format and attribute relevance on counterarguments was marginally significant ($F_{1,93}=3.20$, $p=0.077$). These results support H4a under the high-image condition.

Under the low-image condition, the two-way interaction between the ad format and attribute relevance on ad believability was not significant ($F_{1,84}=1.44$, $p=0.234$). Given the lack of interaction effect of ad format and attribute relevance on ad believability under the low-image condition, no further tests were conducted.

As shown in Table 4.7, ad format did not have any effect on negative tactics-related cognitions ($F_{1,178}=0.10$, $p=0.752$). Also, the interaction effect of ad format and brand image did not have an effect on negative tactics-related cognitions ($F_{1,178}=1.58$, $p=0.211$). Finally, the results revealed that the interaction effect of ad format and attribute relevance did not have an effect on negative tactics-related cognitions ($F_{1,178}=0.75$, $p=0.388$). Given the lack of effect of ad format or the interactions of ad format and brand image, and ad format and attribute relevance, no further tests were conducted.

These findings imply that ad believability mediates the effect of ad format on counterarguments, but not on tactics-related cognitions. In addition, the interaction effect of ad format and brand image on counterarguments was also mediated by ad believability when relevant attributes were used in the ads.

The summary of the results is presented in Table 4.11, 4.12, 4.13, and 4.14.

Table 4.11
Interaction Effect of Ad Format and Brand Image on Dependent Variables
(Under Two Attribute Relevance Conditions)

	Relevance Cond.		Irrelevance Cond.	
	Sig.	Direction	Sig.	Direction
Believability (WBC > ABC and the effect will be greater for low-image compared to high-image brands) - (H5a) Rel.: WBCxHI=4.80, ABCxHI=5.05 (Diff.=0.25) WBCxLI=4.60, ABCxLI=3.27 (Diff.=1.33) Irr.: WBCxHI=4.53, ABCxHI=3.92 (Diff.=0.61) WBCxLI=4.10, ABCxLI=3.30 (Diff.=0.80)	Sig. F=14.98 p=0.000	√	N.S. F=0.20 p=0.660	√
Counterarguments (WBC < ABC and the effect will be greater for low-image compared to high-image brands) - (H5b) Rel.: WBCxHI=0.44, ABCxHI=0.27 (Diff.=0.17) WBCxLI=0.24, ABCxLI=1.46 (Diff.=1.22) Irr.: WBCxHI=0.84, ABCxHI=1.81 (Diff.=0.97) WBCxLI=1.36, ABCxLI=1.44 (Diff.=0.08)	Sig. F=6.54 p=0.012	√	Sig. F=2.98 p=0.088	x
Tactics-Related Cognitions (WBC < ABC and the effect will be greater for low-image compared to high-image brands) - (H5c) Rel.: WBCxHI=0.20, ABCxHI=-0.09 (Diff.=0.29) WBCxLI=0.38, ABCxLI=0.54 (Diff.=0.16) Irr.: WBCxHI=0.24, ABCxHI=0.31 (Diff.=0.07) WBCxLI=0.12, ABCxLI=0.33 (Diff.=0.21)	N.S. F=1.75 p=0.189	√	N.S. F=0.19 p=0.661	√
A_{ad} (WBC > ABC and the effect will be greater for low-image compared to high-image brands) - (H6a) Rel.: WBCxHI=3.91, ABCxHI=4.59 (Diff.=0.68) WBCxLI=3.13, ABCxLI=2.56 (Diff.=0.57) Irr.: WBCxHI=3.38, ABCxHI=2.79 (Diff.=0.59) WBCxLI=2.81, ABCxLI=2.40 (Diff.=0.41)	Sig. F=6.63 p=0.012	√	N.S. F=0.17 p=0.684	x
A_{gr} (WBC > ABC and the effect will be greater for low-image compared to high-image brands) - (H6b) Rel.: WBCxHI=5.08, ABCxHI=5.32 (Diff.=0.24) WBCxLI=4.42, ABCxLI=3.52 (Diff.=0.90) Irr.: WBCxHI=4.67, ABCxHI=3.63 (Diff.=1.04) WBCxLI=3.90, ABCxLI=3.00 (Diff.=0.90)	Sig. F=9.79 p=0.002	√	N.S. F=0.10 p=0.758	x
Search Intention (WBC < ABC and the effect will be greater for low-image compared to high-image brands) - (H7a) Rel.: WBCxHI=3.79, ABCxHI=3.60 (Diff.=0.19) WBCxLI=3.62, ABCxLI=4.08 (Diff.=0.46) Irr.: WBCxHI=3.56, ABCxHI=3.36 (Diff.=0.20) WBCxLI=3.87, ABCxLI=3.94 (Diff.=0.07)	N.S. F=0.75 p=0.389	√	N.S. F=0.13 p=0.722	x
Purchase Intention (WBC > ABC and the effect will be greater for low-image compared to high-image brands) - (H7b) Rel.: WBCxHI=3.67, ABCxHI=4.29 (Diff.=0.62) WBCxLI=3.00, ABCxLI=2.03 (Diff.=0.97) Irr.: WBCxHI=3.59, ABCxHI=2.50 (Diff.=1.09) WBCxLI=2.39, ABCxLI=2.07 (Diff.=0.32)	Sig. F=9.87 p=0.002	√	N.S. F=2.57 p=0.112	x

Table.4.12
Interaction Effect of Ad Format and Attribute Relevance on Dependent Variables
(Under Two Brand Image Conditions)

	High Image		Low Image	
	Sig.	Direction	Sig.	Direction
Believability (WBC > ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H8a) HI: WBCxRel.=4.80, ABCxRel.=5.05 (Diff.=0.25) <i>WBCxIrr.=4.53, ABCxIrr.=3.92 (Diff.=0.61)</i> LI: WBCxRel.=4.60, ABCxRel.=3.27 (Diff.=1.33) <i>WBCxIrr.=4.10, ABCxIrr.=3.30 (Diff.=0.80)</i>	Sig. F=4.12 p=0.045	√	N.S. F=1.44 p=0.234	x
Counterarguments (WBC < ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H8b) HI: WBCxRel.=0.44, ABCxRel.=0.27 (Diff.=0.17) <i>WBCxIrr.=0.84, ABCxIrr.=1.81 (Diff.=0.97)</i> LI: WBCxRel.=0.24, ABCxRel.=1.46 (Diff.=1.22) <i>WBCxIrr.=1.36, ABCxIrr.=1.44 (Diff.=0.08)</i>	Sig. F=4.25 p=0.042	√	Sig. F=5.33 p=0.023	x
Tactics-Related Cognitions (WBC < ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H8c) HI: WBCxRel.=0.20, ABCxRel.=0.09 (Diff.=0.11) <i>WBCxIrr.=0.24, ABCxIrr.=0.31 (Diff.=0.07)</i> LI: WBCxRel.=0.38, ABCxRel.=0.54 (Diff.=0.16) <i>WBCxIrr.=0.12, ABCxIrr.=0.33 (Diff.=0.21)</i>	N.S. F=0.95 p=0.333	√	N.S. F=0.03 p=0.855	x
A_{Ad} (WBC > ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H9a) HI: WBCxRel.=3.91, ABCxRel.=4.59 (Diff.=0.68) <i>WBCxIrr.=3.38, ABCxIrr.=2.79 (Diff.=0.59)</i> LI: WBCxRel.=3.13, ABCxRel.=2.56 (Diff.=0.57) <i>WBCxIrr.=2.81, ABCxIrr.=2.40 (Diff.=0.41)</i>	Sig. F=7.59 p=0.007	√	N.S. F=0.12 p=0.734	x
A_{Br} (WBC > ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H9b) HI: WBCxRel.=5.08, ABCxRel.=5.32 (Diff.=0.24) <i>WBCxIrr.=4.67, ABCxIrr.=3.63 (Diff.=1.04)</i> LI: WBCxRel.=4.42, ABCxRel.=3.52 (Diff.=0.90) <i>WBCxIrr.=3.90, ABCxIrr.=3.00 (Diff.=0.90)</i>	Sig. F=10.81 p=0.001	√	N.S. F=0.00 p=0.993	x
Search Intention (WBC < ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H10a) HI: WBCxRel.=3.79, ABCxRel.=3.61 (Diff.=0.18) <i>WBCxIrr.=3.56, ABCxIrr.=3.36 (Diff.=0.20)</i> LI: WBCxRel.=3.62, ABCxRel.=4.08 (Diff.=0.46) <i>WBCxIrr.=3.87, ABCxIrr.=3.94 (Diff.=0.07)</i>	N.S. F=0.00 p=0.978	x	N.S. F=0.25 p=0.619	x
Purchase Intention (WBC > ABC and the effect will be greater for irrelevant compared to relevant attributes) - (H10b) HI: WBCxRel.=3.67, ABCxRel.=4.29 (Diff.=0.62) <i>WBCxIrr.=3.58, ABCxIrr.=2.50 (Diff.=1.08)</i> LI: WBCxRel.=3.00, ABCxRel.=2.02 (Diff.=0.98) <i>WBCxIrr.=2.39, ABCxIrr.=2.07 (Diff.=0.32)</i>	Sig. F=11.17 p=0.001	√	N.S. F=1.97 p=0.164	x

Table 4.13
Mediation Effect of Ad Believability Hypotheses

	Counterarguments (H4a)		Tactics-Related Cognitions (H4b)	
Ad believability will mediate the effect of "ad format" on:	√		Not tested.	
Ad believability will mediate the interaction effect of "ad format and brand image" on:	Relevance Condition	Irrelevance Condition	Relevance Condition	Irrelevance Condition
	√	Not tested.	Not tested.	Not tested.
Ad believability will mediate the interaction effect of "ad format and attribute relevance" on:	High-Image Condition	Low-Image Condition	High-Image Condition	Low-Image Condition
	√	Not tested.	Not tested.	Not tested.

Table 4.14
Main Effect of Ad Format on Dependent Variables under Attribute Irrelevance and Low Brand Image Conditions

	Attribute Irrelevance		Low Image	
	Sig.	Direction	Sig.	Direction
Believability (WBC > ABC) - (H1a) Attribute Irrelevance: WBC=4.32, ABC=3.67 Low-Image: WBC=4.33, ABC=3.28	Sig. t=2.842 p=0.005	√	Sig. t=4.77 p=0.000	√
Counterarguments (WBC < ABC) - (H1b) Attribute Irrelevance: WBC=1.10, ABC=1.66 Low-Image: WBC=0.85, ABC=1.45	Sig. t=-2.19 p=0.031	√	Sig. t=-2.36 p=0.021	√
Tactics-Related Cognitions (WBC < ABC) - (H1c) Attribute Irrelevance: WBC=0.18, ABC=0.32 Low-Image: WBC=0.24, ABC=0.45	N.S. t=-0.85 p=0.398	√	N.S. t=-1.49 p=0.140	√
A_{Ad} (WBC > ABC) - (H2a) Attribute Irrelevance: WBC=3.10, ABC=2.63 Low-Image: WBC=2.96, ABC=2.49	Sig. t=2.04 p=0.044	√	N.S. t=1.98 p=0.051	√
A_{Br} (WBC > ABC) - (H2b) Attribute Irrelevance: WBC=4.29, ABC=3.37 Low-Image: WBC=4.14, ABC=3.30	Sig. t=3.79 p=0.000	√	Sig. t=3.66 p=0.000	√
Purchase Intention (WBC > ABC) - (H3b) Attribute Irrelevance: WBC=2.99, ABC=2.33 Low-Image: WBC=2.67, ABC=2.05	Sig. t=2.59 p=0.011	√	Sig. t=2.63 p=0.010	√

CHAPTER 5: DISCUSSION AND IMPLICATIONS

A vast amount of research has been conducted in the area of comparative advertising (CA) over the last three decades with equivocal results. It has been suggested by several researchers that the mixed findings may be due to the variance in the context in which the effects of comparative ads have been examined. In other words, these researchers suggest that usage context is an important factor that may influence the effectiveness of comparative ads. Therefore, the study of relevant moderators of the effects of comparative ads becomes extremely important. In addition to focusing on variables likely to moderate the effects of comparative ads, this dissertation also proposes and examines the role of a new type of comparative ad, namely "within-brand comparative ad."

Specifically, this dissertation examines the effectiveness of within-brand comparison (WBC) versus across-brand comparison (ABC). In addition, this dissertation examines comparative advertising in usage contexts that have not been assessed before by (1) analyzing the potential interaction between ad format (WBC vs. ABC) and brand image and (2) examining the potential interaction between ad format (WBC vs. ABC) and attribute relevance. Finally, the mediating effects of ad believability on variables such as, counterarguments and tactics-related cognitions are also examined.

Studies on comparative advertising have always assumed that the comparison brand is that of a competitor. However, comparison brands used in comparative advertisements may not necessarily be a brand marketed by a competitor. In certain instances, a new (i.e., extension) product may also be compared to the original (i.e.,

replaced) product to demonstrate the improvement in the new product. In other words, one possible application of comparative advertising is WBC. In this respect, this dissertation examines whether and when it may be a better tactic to use a WBC ad instead of an ABC ad. Findings of this research help in understanding the issue of whether advertisers should generally focus on WBC rather than ABC to persuade consumers while avoiding the negative effects of comparative advertising.

In order to have a more detailed understanding of the contexts in which WBCs versus ABCs may be more effective, the moderating effects of two variables, brand image and attribute relevance, were examined. Previous studies have mainly used market share, ad credibility, the factual content of the message, and the nature of the dependent measure (i.e., relative or absolute), as the moderators that may influence the relationship between ad format and consumer response (Grewal et al. 1997). Use of brand image and attribute relevance as moderators to replace market share and message content, respectively, may result in more consistent findings in future studies. Brand image and attribute relevance are likely to be measured more accurately and help avoid the problems found with the use of market share and message content in previous CA studies. By using these two moderators that have more theoretical and practical relevance for comparative advertising, it may be possible to better understand how comparative advertising works and explain the mixed findings of previous studies.

Finally, the impact of ad believability on consumers' cognitive responses, attitudes, and behavioral intentions was explored. Previous research suggests that consumers are likely to elicit negative cognitions and have negative attitudes toward CAs due to the content of the message or the tactic used to convey the message.

However, it is also known that CAs provide valuable information in some cases that help consumers in their decision making. As the PKM suggests, today's consumers have come to a point where they are able to assess the persuasion attempts of advertisers effectively (Friestad and Wright 1994). Consequently, consumers do not automatically question the advertising tactic. However, consumers' perceptions of ad believability may affect how elaborately they process the message (Shiv et al. 1997). This dissertation suggests that CAs can be effectively used under some circumstances without resulting in lower ad believability and negative cognitive responses.

This chapter provides a discussion and implications of the findings in the main study. As mentioned above, first the main effect of ad format is discussed. Second, the interaction effects of ad format and brand image, and of ad format and attribute relevance are addressed. Finally, the mediating effect of ad believability on the cognitive variables of counterarguments and negative-tactics related cognitions are discussed.

Main Effect of Ad Format

Since a three-way interaction is present, hypotheses related to the main effect of ad type were interpreted only when the two-way interactions (i.e., interaction between ad format and brand image and interaction between ad format and attribute relevance) were not significant. The two-way interactions were not significant under low brand image and attribute irrelevance conditions.

Based on the PKM, this dissertation argued that ABC ads are more prone to be discounted than WBC ads resulting in less believability, more counterargumentation and more negative tactics-related cognitions (i.e., H1a-H1c). Therefore, ABC ads are

expected to result in lower A_{Ad} , A_{Br} and purchase intention, and higher search intention (i.e., H2a, H2b, H3b, and H3a). Under the low-image and attribute irrelevance conditions, the results showed that ABC ads, in fact, resulted in significantly lower believability, A_{Ad} , A_{Br} , purchase intention, more counterarguments and tactics-related cognitions and slightly higher search intention than WBC ads. Overall, all the main effect hypotheses except H1c were supported when interpreted under low-image and attribute irrelevance conditions. While H1c, the hypothesis regarding the main effect of ad format on tactics-related cognitions, could not be supported, the effect was in the hypothesized direction. From a practical perspective, WBC seems to be a better comparative advertising tactic than ABC under low-image and attribute irrelevance conditions. In other words, WBC ads result in more favorable outcomes than ABC ads when used by low-image brands. Similarly, when irrelevant attributes are used in comparative advertising, WBC ads are perceived more positively than ABC ads and result in more favorable outcomes.

Mediation Effect of Ad Believability

Hypotheses 4a and 4b deal with the mediation effect of ad believability between the independent variables and the cognitive response variables. H4a was supported only for the mediation effect of ad believability between ad format and counterarguments, and between the ad format and brand image interaction and counterarguments under attribute relevance condition. H4b could not be supported. Because of the presence of three-way interactions, these hypotheses were tested under different levels of appropriate independent variables.

Based on the PKM and the CCM it was proposed that a higher level of ad believability will cause a lower level of counterarguments. As WBC ads are more likely to result in higher ad believability than ABC ads, the number of counterarguments tend to be less. Also, the interaction effect of ad format and brand image on counterarguments is mediated by ad believability under the attribute relevance condition. When relevant attributes are used, lower ad believability magnifies the number of counterarguments for a low-image brand. On the other hand, when irrelevant attributes are used ad believability does not mediate the relationship between the ad format and brand image interaction and counterarguments. Ad believability declines for a low-image brand, while the number of counterarguments stays stable. This result indicates that the use of irrelevant attributes creates equal level of counterarguments irrespective of ad believability for low-image brands.

The examination of whether ad believability mediated the effect of ad format and attribute relevance interaction on counterarguments revealed that ad believability did not mediate that relationship for both brand image conditions. While the effects of the ad format and attribute relevance interaction on ad believability and counterarguments were magnified under high-image condition, there was not enough statistical evidence for the mediation effect of ad believability. When ad believability was introduced as a covariate, its effect was not significant. Actually, it was the relevance of the attributes that determined the level of counterarguments when used by a high-image brand.

When low-image condition was analyzed, it was also seen that the interaction of ad format and attribute relevance did not have an effect on ad believability. It was the

ad format that determined ad believability. WBC ads were found to be more believable for low-image brands while irrelevant attributes lowered the ad believability slightly.

Ad believability did not mediate the relationship between ad format and negative tactics-related cognitions, as well as the effects of ad format and brand image, and ad format and attribute relevance interactions on negative tactics-related cognitions. This indicates that consumers are not likely to be skeptical of the comparative advertising tactic per se. While this result leads to a rejection of H4b, it is important to mention the PKM's suggestion that consumers get used to comparative ads throughout their lives because of increasing number of exposures to comparative advertisements. Consumers' coping behavior leads to the insignificant effects of variables that are thought to affect negative tactics-related cognitions confirming Donthu's (1998) findings.

Interaction Effect of Ad Format and Brand Image

Hypotheses 5a through 7b relate to the interaction of ad format and brand image. Based on the PKM and the CCM, it was argued that the negative effects of an ABC ad would be magnified when used by a low-image brand. Because of the presence of a three-way interaction in the analyses, these interaction hypotheses were interpreted within each level of attribute relevance as mentioned in Chapter Four.

It was found that ad format and brand image interaction effect occurred when relevant attributes were used in the ads. Under the attribute relevance condition, ad believability, A_{Ad} , A_{Br} , and purchase intention decreased significantly when an ABC ad is used by a low-image brand. Consistent with expectations, number of counterarguments and search intention also increased when an ABC ad is used by a

low-image brand. Another interesting finding was that the ad format did not make any difference in the variables analyzed for high-image brands when relevant attributes were used. This finding indicates that high-image brands enjoy the flexibility of using either types of CA (i.e., WBC or ABC) as long as they are employing relevant attributes. On the other hand, low-image brands are more likely to benefit from only WBC ads employing relevant attributes.

The major implication of these findings is that ad format has an important role in influencing consumers' perceptions and attitudes when relevant attributes are used. These results suggest that high-image brands have the flexibility of using both types of comparative advertisement tactics while low-image brands can benefit only from WBC ads. Consistent with the PKM and the CCM, the ABC ads resulted in consumers' negative perceptions associated with across brand comparison for a low-image brand.

When irrelevant attributes were used, the interaction between ad format and brand image was not significant and in opposite direction for most of the dependent variables. Especially for low-image brands, the ad format did not have any significant effect on counterarguments when irrelevant attributes were used. However, WBC ads seem to be a better tactic for high-image brands when irrelevant attributes were used.

Additionally, under the attribute irrelevance condition, A_{Br} and purchase intention were not affected by the interaction of ad format and brand image. The results suggest that WBC may be a better tactic for both high- and low-image brands in terms of A_{Br} and purchase intention if irrelevant attributes are used. Contrary to Carpenter et al.'s (1994), this study shows that the use of irrelevant attributes may not be a feasible

tactic in all advertising conditions. In other words, irrelevant attributes should be used only in a WBC ad, if required.

Interaction Effect of Ad Format and Attribute Relevance

Hypotheses 8a through 10b dealt with the interaction effect of ad format and attribute relevance. As explained in the previous chapter, the interpretation of these hypotheses was conducted separately under high and low brand image conditions. Based on the PKM and the CCM, the ABC ads are likely to be processed more elaborately. Therefore, consumers become more skeptical about diagnostic value of attributes used in the ABC ads. As consumers realize that the attributes are irrelevant, the ABC ads will result in negative responses. On the other hand, it was also argued that consumers are not likely to enter the correction stage of the CCM under the WBC condition, and may accept the claims based on relevant as well as irrelevant attributes.

While most of the hypotheses (H8a-H10b) were supported under the high-image condition, mostly contrary results were obtained for the low-image condition. For high-image brands, as long as relevant attributes were used, the type of ad did not have any effect on believability, number of counterarguments, A_{Ad} , A_{Br} and purchase intention. However, the WBC ads seemed to be a better tactic for high-image brands when irrelevant attributes were used. In other words, the ABC ads using irrelevant attributes had more negative outcomes in terms of the variables analyzed while the WBC ads using irrelevant attributes did not have any effect on consumers' perceptions and attitudes.

For the low-image brand, the relevance of the attributes did not affect ad believability, number of counterarguments, A_{Ad} , A_{Br} and purchase intention when ABC

ads were used. On the other hand, the WBC ads using relevant attributes resulted in more positive responses for the low-image brand than the ABC ads, while the use of irrelevant attributes lowered the A_{Ad} , A_{Br} and purchase intention, and increased the number of counterarguments almost to the level of the ABC ads. For example, the respondents raised almost equal number of counterarguments under both ad formats when irrelevant attributes were used. Overall, irrespective of attribute relevance, the WBC ads resulted in more favorable consumer responses than the ABC ads. Hence, these results suggest that low-image brands should prefer WBC ads to ABC ads and avoid using irrelevant attributes.

Theoretical Implications

Previous studies used Attribution Theory (Kelley 1973), the Elaboration Likelihood Model (Petty and Cacioppo 1981), the Theory of Reasoned Action (Ajzen and Fishbein 1980), and a few other theories borrowed from other disciplines. While researchers have used these theories in an attempt to explain the effects of comparative advertising, there has not been an attempt to construct a general theory of comparative advertising or to propose theories that may help explain the contextual effects of comparative advertising (James and Hensel 1991). Consequently, the findings of the existing research are equivocal (Grewal et al. 1997). This dissertation introduced two theories, the PKM and the CCM, to help explain contextual effects of comparative ads.

The PKM suggests that people's personal persuasion knowledge about persuasion agents' goals and tactics is different and it is their coping that determines whether the message will be perceived as believable. In the context of CA, the PKM argues that consumers are moving targets whose knowledge about this advertising tactic

continuously improves. The CCM posits that consumers engage in a two-stage process in processing information. In the characterization stage, consumers engage in processing the claims in the message. Consumers initially accept the incoming information when the extent of processing is low. In the correction stage, consumers assess the other aspects of the message such as the tactic, or in the case of comparative advertising, the brand image or attribute relevance. Consumers are likely to enter the correction stage and discount the claims when they develop cognitions about diagnosticity of those claims (caused when the extent of processing is high). It is the coping behavior of consumers that determine whether they will enter the correction stage. Based on the PKM and the CCM, it was suggested that the WBC ads would result in more favorable outcomes than the ABC ads, and the difference between the WBC and ABC ads would be magnified when a low-image brand sponsors the ad, as well as then irrelevant attributes were used.

This dissertation also examined the mediating role of ad believability. Based on the PKM and the CCM, higher level of ad believability of WBC ads was expected to cause consumers to engage in low elaboration processing and to accept the claims by remaining in the characterization stage. On the other hand, lower level of ad believability was expected to cause consumers to engage in high elaboration and discount the claims by entering the correction stage. Therefore, the levels of the cognitive responses, such as counterarguments and tactics-related cognitions, would depend on ad believability.

While ad believability was expected to mediate the effect of independent variables (including the interaction effects of ad format and brand image, and ad format

and attribute relevance), its mediation effect was supported under certain conditions only for counterarguments. Similarly, one interesting finding of this dissertation is the absence of interaction effects under low brand image condition. One reason that comparative advertising did not have a significant effect under the low-image condition in this dissertation might be that consumers did not want to change their attitudes and perceptions about the low-image brand. The use of a low-image brand with which consumers were familiar, possibly made them infer that the ads were trying to change their attitudes.

The lack of effect of CA under the low-image condition is consistent with the findings of Grewal et al. (1997) that comparative advertising is most effective in enhancing the consumers' attitudes when the sponsor is new to the category and the comparison brand is established in the market but is not the market leader. This is also consistent with Shimp and Dyer's (1978) finding that CAs are more effective in creating, rather than changing attitudes. When the attitudes are already negative for a low-image brand, changing these attitudes through CAs may not be possible as found in this dissertation. Therefore, the usage context really influenced the effectiveness of comparative advertising.

Finally, this dissertation found that attribute relevance is a factor that affects the interaction of ad format and brand image. Similar to the low-image condition explained above, most dependent variables were not affected by the interaction of ad format and brand image under the attribute irrelevance condition. Contrary to the findings of Carpenter et al. (1994), when irrelevant attributes were used, there were no differences in dependent variables caused by the interaction of ad format and brand image.

Carpenter et al. (1994) argued that irrelevant attributes might cause differentiation when consumers infer that those irrelevant attributes lead to other attributes. The lack of an interaction effect of ad format and brand image under irrelevant attribute condition may be due to the product category used in the experiment. Based on the PKM and the CCM, consumers probably did not assign any pragmatic value to the irrelevant attributes for the toothpaste brands. However, the findings in this dissertation indicate that generally comparative advertising may be an effective advertising tactic when relevant attributes are used.

Managerial Implications

Based on the discussion of the results, recommendations for the type of comparative advertising tactic to be used under two different conditions of brand image and attribute relevance are provided in Table 5.1 below.

Table 5.1
Table of CA Tactic Feasibility

	High-Image Brand	Low-Image Brand
Relevant Attribute	WBC or ABC	WBC
Irrelevant Attribute	WBC	Do not use CA

One major managerial implication of this dissertation is that marketing managers should carefully assess the brand's image when attempting to differentiate their brands based on irrelevant attributes. Most of the product categories used in CA research tend to be in their maturity stages. Gnepa (1993) reported that low-industry growth rates were associated with the increased use of comparative advertising. Therefore, it is likely to see more common use of comparative advertising for products

in maturity stage. Additionally, it may be more difficult to differentiate products in maturity stage by using relevant attributes. Because of the aforementioned problem, advertisers may be tempted to use irrelevant attributes to position or differentiate their products. However, consumers' perception of the diagnostic value of the irrelevant attributes may pose serious consequences for the advertiser. Specifically, while a brand may try to differentiate itself from its competitors through creative messages that employ irrelevant attributes, it may not succeed in its endeavor because consumers are likely to discount the information due to its lack of diagnostic value. This possibility is of particular concern for low-image brands.

Another managerial implication is related to the nature of comparison. Comparative advertising pose potential legal problems (e.g., *American Home Products v. Johnson and Johnson* 1978, *Kraft v. FTC* 1991, *Gillette v. Wilkinson Sword* 1991, and *Castrol v. Pennzoil* 1993) because of disparagement and the inability to back up claims (Pechmann 1996). ABC ads are more prone to cause legal problems which may be extremely costly. The WBC ads eliminate this threat because of not comparing a brand to its competitor.

The ABC ads also face a threat of retaliation from competitors. Especially for the low-image brands which try to improve their images, the ABC ads may create serious retaliatory responses from competitors. This may be dangerous such that high-image comparison brands might try to counterattack and actually end up having more favorable competitive condition because of their larger resources.

Based on the discussion above and Table 5.1, high-image brands enjoy the flexibility of using either type of attributes (relevant or irrelevant) in their comparative

advertisements. However, the results also suggest that it is more appropriate for high-image brands to use irrelevant attributes with only WBC ads. On the other hand, low-image brands do not have the flexibility of either using irrelevant attributes, or ABC ads in a comparative advertising setting. Low-image brands should prefer using only relevant attributes along with WBC ads.

One other issue that marketing practitioners should be concerned about is the possibility of brand confusion in comparative advertising. Barry (1993) remarks that if brand confusion (i.e., misidentification of brands) is a likely result of comparative ads, the advertiser is likely diluting the limited funds available for the advertising message. To avoid the inefficient use of limited advertising funds by providing exposure to a high-image competitor brand, low-image brands should use comparative ads only when they have something substantial to say. Otherwise, consumers' two-stage information process (i.e., the CCM) might prompt them to enter the correction stage where they assess the diagnosticity of the claims more elaborately, and discount the claims.

Limitations and Future Research

One of the major limitations of the studies conducted in this dissertation was the use of student subjects. Although several pretests were conducted prior to the main study to make the findings ecologically valid, the use of student subjects might still affect the generalizability of the findings. While the product used in this study was highly relevant to college students, non-college population may still have different consumption behavior. Therefore, this study should also be conducted on different population groups.

The second limitation was the use of only one product category in the experiments. While the product category was carefully selected as a result of a pretest and was appropriate for the student subjects, replication of the results especially with other products that require higher level of involvement is also crucial.

As mentioned in the "managerial implications" section, it is common to see CAs in the maturity stage of the product life cycle. It was also discussed why it may not be very prudent on the part of the advertiser to use irrelevant attributes at this stage of the product life cycle. However, brands in their introduction and growth stages (i.e., in the initial stages of the product life cycle where consumers are less likely to be well-equipped to process messages) might have the flexibility of using some irrelevant attributes to obtain competitive advantage. Therefore, it might be interesting to conduct research using products in introductory and growth stages and analyze the effects of relevant and irrelevant attributes in a comparative ad setting.

The third limitation was related to the level of exposure to the ads. Realistically, consumers are exposed to numerous advertisements in their daily lives and process them in different settings. While the respondents were asked to pretend that they are processing the ads they were exposed in the experiments realistically, still they responded to the questionnaires in an artificial setting. Single exposure to the ads is expected to be ineffective in creating or changing the attitudes and intentions of consumers. Therefore, multiple-exposure to a comparative ad sponsored by a low-image brand might be evaluated differently and be more effective in changing consumers' attitudes and intentions.

Finally, while the ads were professionally prepared by the Graphics Design Department of a major university, they were in black-and-white and seemingly more artificial. Most of the advertisements that appear in magazines are more appealing than the ones that the subjects were exposed to in the experiments. In this respect, the ads that will be used in further studies have to be more professional and appealing.

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**APPENDIX A:
QUESTIONNAIRE FOR PRETEST 1**

The study you are about to participate in concerns different types of advertisements for different types of product categories. Many of the questions and statements are similar and will seem repetitive. Still we would like you to **respond to each and every statement and question**. Before doing so, we need your name and your ID number such that the extra credit can be awarded. **This information will be kept strictly confidential and anonymous.**

YOUR NAME: _____

ID NUMBER: _____

MKT 3401 SECTION #: _____

INSTRUCTOR: _____

Case #: _____

PART 1

Please list 5 consumer products for which you engage in considerable information search before purchase:

1. _____
2. _____
3. _____
4. _____
5. _____

PART 2

Please indicate your response about the following statements by circling the most appropriate number.

1. Comparative advertisements comparing two different brands (e.g., Hitachi vs. Sharp) are often:

Unfair	1	2	3	4	5	6	7	Fair
Inappropriate	1	2	3	4	5	6	7	Appropriate

2. Comparative advertisements where a sponsoring HIGH-IMAGE brand (e.g., SONY) compares itself to a LOW-IMAGE brand (e.g., Samsung) are:

Unfair	1	2	3	4	5	6	7	Fair
Inappropriate	1	2	3	4	5	6	7	Appropriate

3. Comparative advertisements where a sponsoring LOW-IMAGE brand (e.g., Packard-Bell PC) compares itself to a HIGH-IMAGE brand (e.g., Gateway PC) are:

Unfair	1	2	3	4	5	6	7	Fair
Inappropriate	1	2	3	4	5	6	7	Appropriate

4. Comparative advertisements comparing two different products with the same brand name (e.g., SONY DVP C600D vs. SONY DVP S500D) are:

Unfair	1	2	3	4	5	6	7	Fair
Inappropriate	1	2	3	4	5	6	7	Appropriate

5. Comparative advertisements where a HIGH-IMAGE brand compares its two different models (e.g., Nikon Zoom800 vs. Nikon One Touch Zoom70) are:

Unfair	1	2	3	4	5	6	7	Fair
Inappropriate	1	2	3	4	5	6	7	Appropriate

6. Comparative advertisements where a LOW-IMAGE brand compares its two different models (e.g., Vivitar PZ8000 vs. Vivitar PZ700) are:

Unfair	1	2	3	4	5	6	7	Fair
	1	2	3	4	5	6	7	

PART 3

For the product categories below, please indicate your response about the following statements by circling the most appropriate number.

BEER	<p>1. I am familiar with beers.</p> <p>Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree</p>
	<p>2. How important is it for you to make a right choice of a beer?</p> <p>Not at all important 1 2 3 4 5 6 7 Extremely important</p>
	<p>3. Advertisements comparing two different brands of beers (sponsor and comparison brand) are common.</p> <p>Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree</p>
PAIN RELIEVER	<p>1. I am familiar with pain relievers.</p> <p>Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree</p>
	<p>2. How important is it for you to make a right choice of a pain reliever?</p> <p>Not at all important 1 2 3 4 5 6 7 Extremely important</p>
	<p>3. Advertisements comparing two different brands of pain relievers (sponsor and comparison brand) are common.</p> <p>Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree</p>
35 mm. Touch CAMERA	<p>1. I am familiar with 35 mm. touch cameras.</p> <p>Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree</p>
	<p>2. How important is it for you to make a right choice of a 35 mm. touch camera?</p> <p>Not at all important 1 2 3 4 5 6 7 Extremely important</p>
	<p>3. Advertisements comparing two different brands of 35 mm. Touch cameras (sponsor and comparison brand) are common.</p> <p>Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree</p>

CALCULATOR	1. I am familiar with calculators.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
	2. How important is it for you to make a right choice of a calculator?								
	Not at all important	1	2	3	4	5	6	7	Extremely important
3. Advertisements comparing two different brands of calculators (sponsor and comparison brand) are common.									
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

PERSONAL COMPUTER	1. I am familiar with personal computers.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
	2. How important is it for you to make a right choice of a personal computer?								
	Not at all important	1	2	3	4	5	6	7	Extremely important
3. Advertisements comparing two different brands of personal computers (sponsor and comparison brand) are common.									
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

TV SET	1. I am familiar with TV sets.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
	2. How important is it for you to make a right choice of a TV set?								
	Not at all important	1	2	3	4	5	6	7	Extremely important
3. Advertisements comparing two different brands of TV sets (sponsor and comparison brand) are common.									
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

VCR	1. I am familiar with VCRs.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
	2. How important is it for you to make a right choice of a VCR?								
	Not at all important	1	2	3	4	5	6	7	Extremely important
3. Advertisements comparing two different brands of VCRs (sponsor and comparison brand) are common.									
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

MINI SYSTEM HOME STEREO	1. I am familiar with home stereos.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
	2. How important is it for you to make a right choice of a home stereo?								
	Not at all important	1	2	3	4	5	6	7	Extremely important
3. Advertisements comparing two different brands of mini system home stereos (sponsor and comparison brand) are common.									
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

CD CAR STEREO	1. I am familiar with CD car stereos.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
	2. How important is it for you to make a right choice of a CD car stereo?								
	Not at all important	1	2	3	4	5	6	7	Extremely important
3. Advertisements comparing two different brands of CD car stereos (sponsor and comparison brand) are common.									
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

ATHLETIC SHOE	1. I am familiar with athletic shoes.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
	2. How important is it for you to make a right choice of an athletic shoe?								
	Not at all important	1	2	3	4	5	6	7	Extremely important
	3. Advertisements comparing two different brands of athletic shoes (sponsor and comparison brand) are common.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

CORDLESS PHONE	1. I am familiar with cordless phones.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
	2. How important is it for you to make a right choice of a cordless phone?								
	Not at all important	1	2	3	4	5	6	7	Extremely important
	3. Advertisements comparing two different brands of cordless phones (sponsor and comparison brand) are common.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

TOOTHPASTE	1. I am familiar with toothpastes.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
	2. How important is it for you to make a right choice of toothpaste?								
	Not at all important	1	2	3	4	5	6	7	Extremely important
	3. Advertisements comparing two different brands of toothpastes (sponsor and comparison brand) are common.								
	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

APPENDIX B:
LIST OF TOOTHPASTE BRANDS PROVIDED TO RESPONDENTS IN
PRETEST 2

1. Aloe-Dent
2. Aquafresh
3. Arm & Hammer
4. Close-Up
5. Colgate
6. Crest
7. Listerine
8. Mentadent
9. Pepsodent
10. Promise
11. Propolis
12. Rembrandt
13. Sunshine Brite
14. Supersmile
15. Ultrabrite

**APPENDIX C:
QUESTIONNAIRE FOR PRETEST 3**

The study you are about to participate in concerns different brands of toothpaste. Many of the questions and statements are similar and will seem repetitive. Still we would like you to **respond to each and every statement and question**. Before doing so, we need your name and your ID number such that the extra credit can be awarded. **This information will be kept strictly confidential and anonymous.**

YOUR NAME: _____

ID NUMBER: _____

INSTRUCTOR: _____

Case #: _____

Please indicate your response about the following statements by circling the most appropriate number.

	Strongly Disagree					Strongly Agree	
1. Compared to other brands of toothpaste, Arm & Hammer is of very high quality.	1	2	3	4	5	6	7
2. Arm & Hammer is the best brand in its product class.	1	2	3	4	5	6	7
3. Arm & Hammer consistently performs better than all other brands of toothpaste.	1	2	3	4	5	6	7
4. I can always count on Arm & Hammer brand of toothpaste for consistent high quality.	1	2	3	4	5	6	7

5. Compared to other brands of toothpaste, Arm & Hammer is a brand I respect.	1	2	3	4	5	6	7
6. Compared to other brands, Arm & Hammer is one of the most trusted brands of toothpaste.	1	2	3	4	5	6	7
7. Arm & Hammer is a brand of toothpaste that I hold in high esteem.	1	2	3	4	5	6	7
8. Arm & Hammer is a brand of toothpaste I admire.	1	2	3	4	5	6	7

9. Arm & Hammer has a strong personality.	1	2	3	4	5	6	7
10. I have a clear image of the person who uses Arm & Hammer toothpaste.	1	2	3	4	5	6	7
11. When I think of Arm & Hammer , a consistent brand image comes to mind.	1	2	3	4	5	6	7
12. When I see someone using Arm & Hammer brand of	1	2	3	4	5	6	7

13. I am familiar with Arm & Hammer brand of toothpaste.	1	2	3	4	5	6	7
14. I am knowledgeable about Arm & Hammer brand of toothpaste.	1	2	3	4	5	6	7

Please indicate your response about the following statements by circling the most appropriate number.

	Strongly Disagree						Strongly Agree
1. Compared to other brands of toothpaste, Close-Up is of very high quality.	1	2	3	4	5	6	7
2. Close-Up is the best brand in its product class.	1	2	3	4	5	6	7
3. Close-Up consistently performs better than all other brands of toothpaste.	1	2	3	4	5	6	7
4. I can always count on Close-Up brand of toothpaste for consistent high quality.	1	2	3	4	5	6	7
5. Compared to other brands of toothpaste, Close-Up is a brand I respect.	1	2	3	4	5	6	7
6. Compared to other brands, Close-Up is one of the most trusted brands of toothpaste.	1	2	3	4	5	6	7
7. Close-Up is a brand of toothpaste that I hold in high esteem.	1	2	3	4	5	6	7
8. Close-Up is a brand of toothpaste I admire.	1	2	3	4	5	6	7
9. Close-Up has a strong personality.	1	2	3	4	5	6	7
10. I have a clear image of the person who uses Close-Up toothpaste.	1	2	3	4	5	6	7
11. When I think of Close-Up , a consistent brand image comes to mind.	1	2	3	4	5	6	7
12. When I see someone using Close-Up brand of	1	2	3	4	5	6	7
13. I am familiar with Close-Up brand of toothpaste.	1	2	3	4	5	6	7
14. I am knowledgeable about Close-Up brand of toothpaste.	1	2	3	4	5	6	7

Please indicate your response about the following statements by circling the most appropriate number.

	Strongly Disagree						Strongly Agree
1. Compared to other brands of toothpaste, Colgate is of very high quality.	1	2	3	4	5	6	7
2. Colgate is the best brand in its product class.	1	2	3	4	5	6	7
3. Colgate consistently performs better than all other brands of toothpaste.	1	2	3	4	5	6	7
4. I can always count on Colgate brand of toothpaste for consistent high quality.	1	2	3	4	5	6	7
5. Compared to other brands of toothpaste, Colgate is a brand I respect.	1	2	3	4	5	6	7
6. Compared to other brands, Colgate is one of the most trusted brands of toothpaste.	1	2	3	4	5	6	7
7. Colgate is a brand of toothpaste that I hold in high esteem.	1	2	3	4	5	6	7
8. Colgate is a brand of toothpaste I admire.	1	2	3	4	5	6	7
9. Colgate has a strong personality.	1	2	3	4	5	6	7
10. I have a clear image of the person who uses Colgate toothpaste.	1	2	3	4	5	6	7
11. When I think of Colgate, a consistent brand image comes to mind.	1	2	3	4	5	6	7
12. When I see someone using Colgate brand of	1	2	3	4	5	6	7
13. I am familiar with Colgate brand of toothpaste.	1	2	3	4	5	6	7
14. I am knowledgeable about Colgate brand of toothpaste.	1	2	3	4	5	6	7

Please indicate your response about the following statements by circling the most appropriate number.

	Strongly Disagree					Strongly Agree	
1. Compared to other brands of toothpaste, Crest is of very high quality.	1	2	3	4	5	6	7
2. Crest is the best brand in its product class.	1	2	3	4	5	6	7
3. Crest consistently performs better than all other brands of toothpaste.	1	2	3	4	5	6	7
4. I can always count on Crest brand of toothpaste for consistent high quality.	1	2	3	4	5	6	7
5. Compared to other brands of toothpaste, Crest is a brand I respect.	1	2	3	4	5	6	7
6. Compared to other brands, Crest is one of the most trusted brands of toothpaste.	1	2	3	4	5	6	7
7. Crest is a brand of toothpaste that I hold in high esteem.	1	2	3	4	5	6	7
8. Crest is a brand of toothpaste I admire.	1	2	3	4	5	6	7
9. Crest has a strong personality.	1	2	3	4	5	6	7
10. I have a clear image of the person who uses Crest toothpaste.	1	2	3	4	5	6	7
11. When I think of Crest, a consistent brand image comes to mind.	1	2	3	4	5	6	7
12. When I see someone using Crest brand of	1	2	3	4	5	6	7
13. I am familiar with Crest brand of toothpaste.	1	2	3	4	5	6	7
14. I am knowledgeable about Crest brand of toothpaste.	1	2	3	4	5	6	7

Please indicate your response about the following statements by circling the most appropriate number.

	Strongly Disagree					Strongly Agree	
1. Compared to other brands of toothpaste, Gleen is of very high quality.	1	2	3	4	5	6	7
2. Gleen is the best brand in its product class.	1	2	3	4	5	6	7
3. Gleen consistently performs better than all other brands of toothpaste.	1	2	3	4	5	6	7
4. I can always count on Gleen brand of toothpaste for consistent high quality.	1	2	3	4	5	6	7

5. Compared to other brands of toothpaste, Gleen is a brand I respect.	1	2	3	4	5	6	7
6. Compared to other brands, Gleen is one of the most trusted brands of toothpaste.	1	2	3	4	5	6	7
7. Gleen is a brand of toothpaste that I hold in high esteem.	1	2	3	4	5	6	7
8. Gleen is a brand of toothpaste I admire.	1	2	3	4	5	6	7

9. Gleen has a strong personality.	1	2	3	4	5	6	7
10. I have a clear image of the person who uses Gleen toothpaste.	1	2	3	4	5	6	7
11. When I think of Gleen , a consistent brand image comes to mind.	1	2	3	4	5	6	7
12. When I see someone using Gleen brand of	1	2	3	4	5	6	7

13. I am familiar with Gleen brand of toothpaste.	1	2	3	4	5	6	7
14. I am knowledgeable about Gleen brand of toothpaste.	1	2	3	4	5	6	7

Please indicate your response about the following statements by circling the most appropriate number.

	Strongly Disagree				Strongly Agree		
1. Compared to other brands of toothpaste, Pepsodent is of very high quality.	1	2	3	4	5	6	7
2. Pepsodent is the best brand in its product class.	1	2	3	4	5	6	7
3. Pepsodent consistently performs better than all other brands of toothpaste.	1	2	3	4	5	6	7
4. I can always count on Pepsodent brand of toothpaste for consistent high quality.	1	2	3	4	5	6	7

5. Compared to other brands of toothpaste, Pepsodent is a brand I respect.	1	2	3	4	5	6	7
6. Compared to other brands, Pepsodent is one of the most trusted brands of toothpaste.	1	2	3	4	5	6	7
7. Pepsodent is a brand of toothpaste that I hold in high esteem.	1	2	3	4	5	6	7
8. Pepsodent is a brand of toothpaste I admire.	1	2	3	4	5	6	7

9. Pepsodent has a strong personality.	1	2	3	4	5	6	7
10. I have a clear image of the person who uses Pepsodent toothpaste.	1	2	3	4	5	6	7
11. When I think of Pepsodent , a consistent brand image comes to mind.	1	2	3	4	5	6	7
12. When I see someone using Pepsodent brand of	1	2	3	4	5	6	7

13. I am familiar with Pepsodent brand of toothpaste.	1	2	3	4	5	6	7
14. I am knowledgeable about Pepsodent brand of toothpaste.	1	2	3	4	5	6	7

Please list the attributes (features) of toothpaste that would be important to you in your purchase decision.

Please indicate how RELEVANT OR IRRELEVANT (i.e., the meaningfulness of an attribute about its implied benefit) are the following attributes for comparing two or more brands of toothpaste within the same price category.

	Highly Irrelevant				Highly Relevant			
Fluoride content (capability of preventing cavities): -----	1	2	3	4	5	6	7	
Abrasiveness (capability of removing tartar): -----	1	2	3	4	5	6	7	
Anti-bacterial action: -----	1	2	3	4	5	6	7	
Bad-breath action: -----	1	2	3	4	5	6	7	
Plaque removal action: -----	1	2	3	4	5	6	7	
Whitening action: -----	1	2	3	4	5	6	7	
Polishing action: -----	1	2	3	4	5	6	7	
Refreshing action: -----	1	2	3	4	5	6	7	
Effectiveness for sensitive teeth: -----	1	2	3	4	5	6	7	
Peroxide content: -----	1	2	3	4	5	6	7	
Baking Soda content: -----	1	2	3	4	5	6	7	
Foaming agent content: -----	1	2	3	4	5	6	7	
Chemical ingredient content: -----	1	2	3	4	5	6	7	
Herbal ingredient content: -----	1	2	3	4	5	6	7	
Color: -----	1	2	3	4	5	6	7	
Flavor: -----	1	2	3	4	5	6	7	
Texture (gel vs. paste): -----	1	2	3	4	5	6	7	
Absence of sugar: -----	1	2	3	4	5	6	7	
ADA (American Dental Association) approval: -----	1	2	3	4	5	6	7	
"Tube-winder": -----	1	2	3	4	5	6	7	
Pump-package: -----	1	2	3	4	5	6	7	

Which brand of toothpaste do you use? _____

**APPENDIX D:
QUESTIONNAIRE FOR PILOT STUDY**

ADVERTISING SURVEY

The survey in which you are about to participate is being conducted by the Marketing Department at Louisiana State University. Before proceeding with the survey, we need your name and your ID number such that the extra credit can be awarded. The information you provide will be kept STRICTLY CONFIDENTIAL.

NAME: _____

STUDENT ID #: _____

In this study, you will be exposed to a print advertisement for a certain brand of TOOTHPASTE. The advertisement is stapled to the inside front cover of the folder. Please respond to the questions on the following pages while viewing the attached advertisement unless instructed otherwise. Please respond to all questions in a manner which most accurately reflects your opinions. While many questions appear similar, PLEASE ANSWER ALL QUESTIONS. Thank you very much for your assistance.

CODE #:

PART A

"We are interested in knowing what was going through your mind as you were reading the ad excerpt. Please write down anything and everything you remember going through your mind when you were reading the ad excerpt."

1.

2.

3.

4.

5.

6.

7.

8.

Can you think of anything else?

1.

2.

3.

PART B: Please indicate your response about the statements below by circling the most appropriate number.

This advertising tactic used by **Mentadent Crystal Ice** is:

Unfair	1	2	3	4	5	6	7	Fair
Offensive	1	2	3	4	5	6	7	Not Offensive

PART C: The following statements relate to quality of the advertised **Mentadent Crystal Ice** toothpaste. Please indicate your response about the statements below by circling the most appropriate number.

The advertised **Mentadent Crystal Ice** toothpaste is very effective for oral hygiene.

Strongly
Disagree

1

2

3

4

5

6

7

Strongly
Agree

The advertised **Mentadent Crystal Ice** toothpaste is of very high quality.

Strongly
Disagree

1

2

3

4

5

6

7

Strongly
Agree

The advertised **Mentadent Crystal Ice** toothpaste performs very well.

Strongly
Disagree

1

2

3

4

5

6

7

Strongly
Agree

Buying the advertised Mentadent Crystal Ice is a good decision.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I think the advertised Mentadent Crystal Ice is a satisfactory brand.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I think Mentadent Crystal Ice depicted in the ad has a lot of beneficial characteristics.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I have a favorable opinion of the advertised Mentadent Crystal Ice.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

PART E: Please indicate your response about the Mentadent Crystal Ice toothpaste advertisement by circling the most appropriate number.

My overall evaluation of the ad is:								
Bad	1	2	3	4	5	6	7	Good
Unappealing	1	2	3	4	5	6	7	Appealing
Not likable	1	2	3	4	5	6	7	Likable
Not interesting	1	2	3	4	5	6	7	Interesting

PART F: Assuming that you are **INDIFFERENT** about toothpaste brands, please indicate your response about the statements below by circling the most appropriate number.

It is very likely that I will buy the advertised Mentadent Crystal Ice.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I will purchase the advertised Mentadent Crystal Ice next time I need toothpaste.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I will definitely try Mentadent Crystal Ice depicted in the advertisement.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

If you were to purchase the advertised toothpaste, how likely is it that you would search for information other than that provided in the ad?

Very unlikely

1

2

3

4

5

6

7

Very likely

How probable is it that you would search for information other than that offered by the advertiser, if you had decided to buy the advertised toothpaste?

Not probable
at all

1

2

3

4

5

6

7

Very probable

If you were going to buy the advertised toothpaste, would you check the attributes of other brands in search of a product better than that you find in the advertisement?

Definitely would
not check attributes
of other brands

1

2

3

4

5

6

7

Definitely would
check attributes
of other brands

PART H: The following are statements about the brand name "Mentadent" in general. Please indicate your response about the statements below by circling the most appropriate number.

	Strongly Disagree							Strongly Agree						
Compared to other brands of toothpaste, Mentadent is of very high quality.	1	2	3	4	5	6	7							
Mentadent is the best brand in its product class.	1	2	3	4	5	6	7							
Mentadent consistently performs better than all other brands of toothpaste.	1	2	3	4	5	6	7							
I can always count on Mentadent brand of toothpaste for consistent high quality.	1	2	3	4	5	6	7							

Compared to other brands of toothpaste, Mentadent is a brand I respect.	1	2	3	4	5	6	7							
Compared to other brands, Mentadent is one of the most trusted brands of toothpaste.	1	2	3	4	5	6	7							
Mentadent is a brand of toothpaste that I hold in high esteem.	1	2	3	4	5	6	7							
Mentadent is a brand of toothpaste I admire.	1	2	3	4	5	6	7							

I am familiar with Mentadent brand of toothpaste.	1	2	3	4	5	6	7							
I am knowledgeable about Mentadent brand of toothpaste.	1	2	3	4	5	6	7							

	Low Image					High Image	
I believe Mentadent brand of toothpaste has a:	1	2	3	4	5	6	7

PART I: Please indicate how RELEVANT or IRRELEVANT (i.e., the meaningfulness of an attribute about its implied benefit) are the following attributes for comparing two or more brands of toothpaste within the same price category.

	Highly Irrelevant					Highly Relevant	
Fluoride content (capability of preventing cavities): -----	1	2	3	4	5	6	7
Anti-tartar action: -----	1	2	3	4	5	6	7
Herbal ingredient content: -----	1	2	3	4	5	6	7
Whitening action: -----	1	2	3	4	5	6	7
ADA (American Dental Association) approval: -----	1	2	3	4	5	6	7
"Tube-winder": -----	1	2	3	4	5	6	7
Pump package: -----	1	2	3	4	5	6	7

PART J: The following items relate to the toothpaste brand you use most frequently. Please indicate your response about the statements below by circling the most appropriate number.

Which brand of toothpaste do you most frequently purchase? _____						
I always buy the above brand of toothpaste.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I am willing to buy a new brand of toothpaste.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
My overall opinion of the brand of toothpaste I presently use is very good.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

PART K: Please check only one option without referring to the advertisement.

The ad that you saw compared Mentadent Crystal Ice with:

Mentadent Mint Gel _____

Close-Up Mint Gel _____

Did not compare with any other brand. _____

PART L: The following statements are designed to assess your attitude toward advertising in general. Please circle the most appropriate number for each statement.

We can depend on getting the truth in most advertising

**Strongly
Disagree**

1

2

3

4

5

6

**Strongly
Agree**

7

Advertising's aim is to inform the consumer.

**Strongly
Disagree**

1

2

3

4

5

6

**Strongly
Agree**

7

I believe advertising is informative.

**Strongly
Disagree**

1

2

3

4

5

6

**Strongly
Agree**

7

Advertising is generally truthful.

**Strongly
Disagree**

1

2

3

4

5

6

**Strongly
Agree**

7

Advertising is a reliable source of information about the quality and performance of products.

**Strongly
Disagree**

1

2

3

4

5

6

**Strongly
Agree**

7

Advertising is truth well told.

**Strongly
Disagree**

1

2

3

4

5

6

**Strongly
Agree**

7

In general, advertising presents a true picture of the product being advertised.

**Strongly
Disagree**

1

2

3

4

5

6

**Strongly
Agree**

7

I feel I've been accurately informed after viewing most advertisements.

**Strongly
Disagree**

1

2

3

4

5

6

**Strongly
Agree**

7

Most advertising provides consumers with essential information.

**Strongly
Disagree**

**Strongly
Agree**

M. These last questions are designed for classification purposes only.

1. What is your gender?

Male _____ Female _____

2. What is your age? _____

Thank you very much for your help with this project. We greatly appreciate your time and effort.

**APPENDIX E:
QUESTIONNAIRE FOR PRETEST 4**

The study you are about to participate in concerns different types of advertisements for different types of product categories. Many of the questions and statements are similar and will seem repetitive. Still we would like you to **respond to each and every statement and question**. Before doing so, we need your name and your ID number such that the extra credit can be awarded. **This information will be kept strictly confidential and anonymous.**

YOUR NAME: _____

ID NUMBER: _____

Case #: _____

PART 1

If MENTADENT toothpaste decides to compare itself with another brand in a comparative ad, how likely is it to use the following as comparison brands?

	Not Likely at all						Extremely likely
1. Crest	1	2	3	4	5	6	7
2. Colgate	1	2	3	4	5	6	7
3. Close Up	1	2	3	4	5	6	7
4. Gleem	1	2	3	4	5	6	7
5. Ultrabrite	1	2	3	4	5	6	7

PART 2

Please indicate your response about the following statements by circling the most appropriate number.

1. Comparative advertisements comparing two different brands (e.g., Hitachi vs. Sharp) are often:

Unbelievable 1 2 3 4 5 6 7 Believable

2. Comparative advertisements where a sponsoring HIGH-IMAGE brand (e.g., SONY) compares itself to a LOW-IMAGE brand (e.g., Samsung) are:

Unbelievable 1 2 3 4 5 6 7 Believable

3. Comparative advertisements where a sponsoring LOW-IMAGE brand (e.g., Packard-Bell PC) compares itself to a HIGH-IMAGE brand (e.g., Gateway PC) are:

Unbelievable 1 2 3 4 5 6 7 Believable

4. Comparative advertisements comparing two different products with the same brand name (e.g., SONY DVP C600D vs. SONY DVP S500D) are:

Unbelievable 1 2 3 4 5 6 7 Believable

5. Comparative advertisements where a HIGH-IMAGE brand compares its two different models (e.g., Nikon Zoom800 vs. Nikon One Touch Zoom70) are:

Unbelievable 1 2 3 4 5 6 7 Believable

6. Comparative advertisements where a LOW-IMAGE brand compares its two different models (e.g., Vivitar PZ8000 vs. Vivitar PZ700) are:

Unbelievable 1 2 3 4 5 6 7 Believable

PART 1

If PEPSODENT toothpaste decides to compare itself with another brand in a comparative ad, how likely is it to use the following as comparison brands?

	Not Likely at all						Extremely likely
1. Crest	1	2	3	4	5	6	7
2. Colgate	1	2	3	4	5	6	7
3. Close Up	1	2	3	4	5	6	7
4. Gleem	1	2	3	4	5	6	7
5. Ultrabrite	1	2	3	4	5	6	7

PART 2

Please indicate your response about the following statements by circling the most appropriate number.

1. Comparative advertisements comparing two different brands (e.g., Hitachi vs. Sharp) are often:

Unbelievable 1 2 3 4 5 6 7 Believable

2. Comparative advertisements where a sponsoring HIGH-IMAGE brand (e.g., SONY) compares itself to a LOW-IMAGE brand (e.g., Samsung) are:

Unbelievable 1 2 3 4 5 6 7 Believable

3. Comparative advertisements where a sponsoring LOW-IMAGE brand (e.g., Packard-Bell PC) compares itself to a HIGH-IMAGE brand (e.g., Gateway PC) are:

Unbelievable 1 2 3 4 5 6 7 Believable

4. Comparative advertisements comparing two different products with the same brand name (e.g., SONY DVP C600D vs. SONY DVP S500D) are:

Unbelievable 1 2 3 4 5 6 7 Believable

5. Comparative advertisements where a HIGH-IMAGE brand compares its two different models (e.g., Nikon Zoom800 vs. Nikon One Touch Zoom70) are:

Unbelievable 1 2 3 4 5 6 7 Believable

6. Comparative advertisements where a LOW-IMAGE brand compares its two different models (e.g., Vivitar PZ8000 vs. Vivitar PZ700) are:

Unbelievable 1 2 3 4 5 6 7 Believable

APPENDIX F:
QUESTIONNAIRE FOR PRETEST 5

The study you are about to participate in concern selection of a sub-brand name for a nationally marketed toothpaste brand. We would like you to **respond to each and every statement and question**. Before doing so, we need your name and your ID number such that the extra credit can be awarded. **This information will be kept strictly confidential and anonymous.**

YOUR NAME: _____

ID NUMBER: _____

Case #: _____

A nationally marketed toothpaste brand will introduce a new toothpaste to the market that will compete against Colgate Total, a multi-purpose toothpaste. Brand manager wants to decide on a sub-brand name that will best describe the *multi-purpose* characteristic of new toothpaste. Based on the information above, please indicate your response about the following statements by circling the most appropriate number.

1. In terms of implying their *multi-purpose* characteristic, how similar are "Multi-Action Plus" and "Total" sub-brand names?

Not Similar 1 2 3 4 5 6 7 Very Similar

2. In terms of implying their *multi-purpose* characteristic, how similar are "Multi-Action Plus" and "Multi Care" sub-brand names?

Not Similar 1 2 3 4 5 6 7 Very Similar

3. In terms of implying their *multi-purpose* characteristic, how similar are "Multi Care" and "Total" sub-brand names?

Not Similar 1 2 3 4 5 6 7 Very Similar

4. In terms of implying their *multi-purpose* characteristic, how similar are "Multi Action Plus" and "Multi Care Plus" sub-brand names?

Not Similar 1 2 3 4 5 6 7 Very Similar

5. In terms of implying their *multi-purpose* characteristic, how similar are "Multi Care Plus" and "Total" sub-brand names?

Not Similar 1 2 3 4 5 6 7 Very Similar

**APPENDIX G:
QUESTIONNAIRE FOR MAIN STUDY**

ADVERTISING SURVEY

The survey in which you are about to participate is being conducted by the Marketing Department at Louisiana State University. Before proceeding with the survey, we need your name and your ID number such that the extra credit can be awarded. The information you provide will be kept STRICTLY CONFIDENTIAL.

NAME: _____

STUDENT ID #: _____

INSTRUCTOR: _____

In this study, you will be exposed to a mock print advertisement for a brand of TOOTHPASTE. The advertisement is stapled to the inside front cover of the folder. Please respond to the questions on the following pages while viewing the attached advertisement unless instructed otherwise. Please respond to all questions in a manner which most accurately reflects your opinions. While many questions appear similar, PLEASE ANSWER ALL QUESTIONS. Thank you very much for your assistance.

CONSENT

I, _____, agree to participate in the research described below which will be used in the dissertation of Mehmet Ismail Yagci (Ph.D. Candidate). This research has been approved by the LSU Human Subjects Committee. The study will survey your attitudes and behavior after being exposed to a comparative advertisement and will require you to answer a 15- to 20-minute survey.

Signature of Participant

Date

CODE #:

PART A: Please indicate your response about the statements below by circling the most appropriate number.

The claims in the ad are true.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I believe the claims in the ad.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
The ad is sincere.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I think the ad is honest.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
How likely is it that New Mentadent Multi Action Plus better toothpaste than Crest Multi Care Plus?						
Very Unlikely						Very Likely

<p>"We are interested in knowing what was going through your mind <u>with respect to the claims made in the advertisement</u> as you were reading the ad excerpt. Please write down <u>anything and everything</u> you remember going through your mind <u>about the claims</u> when you were reading the ad excerpt."</p>	
1.	
2.	
3.	
4.	
5.	
6.	
<p>"We are also interested in knowing what was going through your mind <u>with respect to the advertising tactic used by the sponsor</u> as you were reading the ad excerpt. Please write down <u>anything and everything</u> you remember going through your mind <u>about the advertising tactic</u> when you were reading the ad excerpt."</p>	
1.	
2.	
3.	
4.	
5.	
6.	

PART B: The following statements relate to quality of the advertised New Mentadent Multi Action Plus toothpaste. Please indicate your response about the statements below by circling the most appropriate number.

The advertised New Mentadent Multi Action Plus toothpaste is very effective for oral hygiene.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
The advertised New Mentadent Multi Action Plus toothpaste is of very high quality.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
The advertised New Mentadent Multi Action Plus toothpaste performs very well.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

PART C: Please indicate your response about the statements below by circling the most appropriate number.

Buying the advertised New Mentadent Multi Action Plus is a good decision.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I think the advertised New Mentadent Multi Action Plus is a satisfactory brand.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I think New Mentadent Multi Action Plus depicted in the ad has a lot of beneficial characteristics.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I have a favorable opinion of the advertised New Mentadent Multi Action Plus.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

PART D: Assuming you are **INDIFFERENT** about toothpaste brands, please respond to the questions below by circling the most appropriate number.

If you were to purchase the advertised toothpaste, how likely is it that you would search for information other than that provided in the ad?						
Very unlikely						Very likely
1	2	3	4	5	6	7
How probable is it that you would search for information other than that offered by the advertiser, if you had decided to buy the advertised toothpaste?						
Not probable at all						Very probable
1	2	3	4	5	6	7
If you were going to buy the advertised toothpaste, would you check the attributes of other brands in search of a product better than that you find in the advertisement?						
Definitely would not check attributes of other brands						Definitely would check attributes of other brands
1	2	3	4	5	6	7

PART E: Again, assuming that you are **INDIFFERENT** about toothpaste brands, please indicate your response about the statements below by circling the most appropriate number.

It is very likely that I will buy the advertised New Mentadent Multi Action Plus.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I will purchase the advertised New Mentadent Multi Action Plus next time I need toothpaste.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I will definitely try New Mentadent Multi Action Plus depicted in the advertisement.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

PART F: Please indicate your response about the New Mentadent Multi Action Plus toothpaste advertisement by circling the most appropriate number.

My overall evaluation of the ad is:								
Bad	1	2	3	4	5	6	7	Good
Unappealing	1	2	3	4	5	6	7	Appealing
Not likable	1	2	3	4	5	6	7	Likable
Not interesting	1	2	3	4	5	6	7	Interesting

PART G: The following are statements about the brand name "Mentadent" in general. Please indicate your response about the statements below by circling the most appropriate number.

	Strongly Disagree					Strongly Agree	
I am familiar with Mentadent brand of toothpaste.	1	2	3	4	5	6	7
I am knowledgeable about Mentadent brand of toothpaste.	1	2	3	4	5	6	7

	Strongly Disagree					Strongly Agree	
Compared to other brands of toothpaste, Mentadent is of very high quality.	1	2	3	4	5	6	7
Mentadent is the best brand in its product class.	1	2	3	4	5	6	7
Mentadent consistently performs better than all other brands of toothpaste.	1	2	3	4	5	6	7
I can always count on Mentadent brand of toothpaste for consistent high quality.	1	2	3	4	5	6	7

	Strongly Disagree					Strongly Agree	
Compared to other brands of toothpaste, Mentadent is a brand I respect.	1	2	3	4	5	6	7
Compared to other brands, Mentadent is one of the most trusted brands of toothpaste.	1	2	3	4	5	6	7
Mentadent is a brand of toothpaste that I hold in high esteem.	1	2	3	4	5	6	7
Mentadent is a brand of toothpaste I admire.	1	2	3	4	5	6	7

	Low Image					High Image	
I believe Mentadent brand of toothpaste has a:	1	2	3	4	5	6	7

PART H: Please indicate how **RELEVANT** or **IRRELEVANT** (i.e., the meaningfulness of an attribute about its implied benefit) are the following attributes for comparing two or more brands of toothpaste within the same price category.

	Highly Irrelevant					Highly Relevant	
Fluoride content (capability of preventing cavities): —	1	2	3	4	5	6	7
Anti-tartar action: —————	1	2	3	4	5	6	7
Herbal ingredient content: —————	1	2	3	4	5	6	7
Whitening action: —————	1	2	3	4	5	6	7
ADA (American Dental Association) approval: ————	1	2	3	4	5	6	7
"Tube-winder": —————	1	2	3	4	5	6	7
Color: —————	1	2	3	4	5	6	7

PART I: Please check only one option without referring to the advertisement.

The ad that you saw compared New Mentadent Multi Action Plus with:	
Crest Multi Care Plus	_____
Mentadent Multi Action Plus	_____
Did not compare with any other brand.	_____

PART J: The following statements are designed to assess your attitude toward advertising in general. Please circle the most appropriate number for each statement.

We can depend on getting the truth in most advertising						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
Advertising's aim is to inform the consumer.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I believe advertising is informative.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
Advertising is generally truthful.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
Advertising is a reliable source of information about the quality and performance of products.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
Advertising is truth well told.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
In general, advertising presents a true picture of the product being advertised.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I feel I've been accurately informed after viewing most advertisements.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
Most advertising provides consumers with essential information.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

PART K: The following items relate to the toothpaste brand you use most frequently. Please indicate your response about the statements below by circling the most appropriate number.

Which brand of toothpaste do you most frequently purchase? _____						
I always buy the above brand of toothpaste.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
I am willing to buy a new brand of toothpaste.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7
My overall opinion of the brand of toothpaste I presently use is very good.						
Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

PART L: Please indicate your response about the statements below by circling the most appropriate number.

This advertising tactic used by New Mentadent Multi Action Plus is:								
Unfair	1	2	3	4	5	6	7	Fair
Offensive	1	2	3	4	5	6	7	Not Offensive

1. What is your gender?	
Male _____	Female _____
2. What is your age? _____	

Thank you very much for your help with this project. We greatly appreciate your time and effort.

VITA

Mehmet Ismail Yagci received his bachelor of science degree in management from the Middle East Technical University in 1988. After working in the banking industry in Turkey for several years, he received his master of business administration degree at Wayne State University in 1995. Finally he fulfilled the requirements for receiving the degree of Doctor of Philosophy in Business Administration (Marketing) in 2000, with a minor in mass communication. He is currently teaching at Loyola University-New Orleans.

DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Mehmet Ismail Yagci

Major Field: Business Administration (Marketing)

Title of Dissertation: The Effects of Comparative Advertising Format on
Consumer Responses: The Moderating Effects of Brand Image and Attribute
Relevance

Approved:

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

Date of Examination:

March 24, 2000