INFORMATION PROCESSING STYLE, ADVERTISING MESSAGE STRATEGY, AND PRODUCT TYPE: A TEST OF THE MATCHING EFFECT HYPOTHESIS

by

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(Under the Direction of Spencer F. Tinkham)

ABSTRACT

Advertising effectiveness can be evaluated by consumers' attitudinal responses based on the argument that attitude is an overall evaluation of a given object that can guide behavior. Attitude can be analyzed along two dimensions—affect and cognition. This structure can also be applied to classify advertising message appeals, individual tendencies, and product characteristics. Because, much prior research concerning advertising message effects in terms of affective/cognitive responses shows inconsistent results, this study investigated affective/cognitive advertising effects generated by a match of advertising messages to information processing styles and/or to product types. The present study provides a broader scope for exploring affective/cognitive matching effects involving three pivotal factors—advertising messages, information processing styles, and product types— and offers a more detailed approach based on consideration of interaction effects between affect and cognition.

Advertising message strategy was classified into three appeals (informational, dual, and transformational ads); information processing style was categorized into four types (thinking, combination, feeling, and passive processors); and product type classified into three categories

(think, combination, and feel products). From pretests, three products—a laser printer, an mp3 player, and a swimsuit—were selected and nine print advertisements (three for each product type) were created for the present study. An experiment involving 347 undergraduate students was employed to address nine hypotheses and two research questions.

The results suggest that there was no three-way affective/cognitive matching or mismatching effect among advertising message strategy, information processing style, and product type. For a match between advertising appeal and product type, a matching effect was found when advertising appeal matched product type. That is, the advertising messages were most effective when the informational advertisement was matched to the think product and when the transformational advertisement was matched to the feel product. For a match of advertising appeal to information processing style, no consistent matching effect was found. Instead, transformational advertisements generated the most positive advertising message effects across information processing styles. For passive processors, both a match of the informational advertisement to the think product and a match of the transformational advertisement to the feel product were more effective than a mismatch strategy for each.

Implications of the findings for affective/cognitive matching effects are discussed and limitations and suggestions for future research are presented.

Index words: Advertising effectiveness, Matching effect, Information processing, Message strategy, Product type, Affect and cognition.

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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2006

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May 2006

DEDICATION

This Dissertation is dedicated to my dearly loved father and mother

who always love and encourage me.

ACKNOWLEDGEMENTS

I would like to acknowledge the support of many who have helped me throughout my graduate programs and my dissertation research. First of all, I would like to especially thank Dr. Spencer Tinkham, my major professor, for sharing his knowledge and expertise, and for the guidance and sustained support that he provided at various junctures of my doctoral program. Always, it has been so glad to me that he is my advisor. I express my sincere appreciation to Dr. Leonard Reid and Dr. Karen King for their thoughtful advice and support throughout my doctoral training. They were both encouraging me with their warmth, support and good humor. I also thank Dr. Joseph Dominick and Dr. George Zinkhan, who were willing to serve on my committee, for every comment and challenge raised the quality of the research.

I want to express my earnest appreciation to my mother and father who have always trusted and inspired me. They will celebrate my completion of this project as if it were their own. My deepest debt is to Alex, my seventeen month old baby daughter living with her grand parents in Korea, from when she was only six month old. I couldn't even express how much pleased I am about seeing her soon. My son Jake, he is an amazing refresher, whose laughs beat all my concerns and worries off. He is always telling me "Daddy, don't go to school at night, play with me! I want to be with you". I owe him a big thank-you for everything he has given me. Further, my deepest thanks are to my parents-in-law who have always heartened me up. I especially thank my mother-in-law for her love and unconditional support; I will never forget it.

Finally, I would like to express my love and gratitude to Hyeonjin, the love of my life, for her love, encouragement, willingness, and even great enthusiasm to support me personally and professionally. She is a constant source of my strength so that I could always rely on her for this project has been completed.

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CHAPTER 1

INTRODUCTION TO THE RESEARCH

Introduction

One of the ultimate goals of advertising is to persuade consumers to buy certain brands over others (Martin et al., 2003). However, it is difficult to assess the direct influence of advertising on a purchase, because advertising does not directly or solely affect a consumer's behavior (Belch & Belch, 2001). Researchers have been developing theories to describe, understand, and predict consumers' attitudinal responses to advertising (Cohen, 1987). Advertising effects can be evaluated by consumers' attitudinal responses because attitude is an overall evaluation of a given object (Zanna & Rempel, 1988) and attitude can guide behavior (Fazio, 1990; Haddock & Zanna, 1993). The underlying structure of attitudes can be analyzed mainly along two dimensions: affect and cognition (Zanna & Rempel, 1988). This structure has also been applied to differentiate types of persuasive messages (Breckler, 1984; Puto & Wells, 1984). Moreover, the same distinction has been applied to the classification of information processing styles (an individual difference) (Sojka & Giese, 1997) and the nature of products (Chaudhuri & Holbrook, 2002).

In persuasion research, it has been largely agreed that different types of persuasive messages have different effects on attitude change in terms of affect and cognition (McGuire, 1968). Empirical research showed that the affective- and cognitive-based attitudes can be differently influenced by affective and/or cognitive persuasion (Wheeler et al., 2005); although,

the effect of matching the type of persuasion with the basis of attitude is still controversial (Edwards, 1990; Edwards & von Hippel, 1995; Millar & Millar, 1990).

In advertising research, there have been attempts to investigate differential effects on attitudes depending on affective/cognitive advertising message strategies (Aaker & Norris, 1982; Loef et al., 2001). Further, these attempts have involved the role of an individual's personality and product characteristics as moderators of the relationship between ad messages and attitudes. In terms of the affective/cognitive matching effect, researchers have been intrigued by discovering that there is a "fit" between the advertising message and the individual's personality (LaBarbera et al., 1998; Wheeler et al., 2005) or between the advertising message and product characteristics (Dubé et al., 1996; Johar & Sirgy, 1991; Rossiter et al., 1991; Till & Busler, 2000; Vaughn, 1980). Some researchers suggested that a match between persuasive message and an individual's characteristics (Edwards, 1990; Fabrigar & Petty, 1998; LaBarbera et al., 1998; Ruiz & Sicilia, 2004) or a match between ad message and product type (Johar & Sirgy, 1991; Shavitt, 1989) is more effective than a mismatch. Other researchers proposed that a mismatch between the ad message and an individual's characteristics (Millar & Millar, 1990) or mismatch between the ad message and product type (Dubé et al., 1996) is more effective than a match. Although the results of prior research concerning the affective/cognitive matching effect are still controversial, these studies provided researchers and practitioners with a useful approach for the selection of advertising messages (Loef et al., 2001). Nevertheless, most prior research has focused on the relationship between message and personality or the relationship between message and product. Little is known about matching effects considering inclusive interactions between types of message appeals and types of the two moderators (individual's information processing styles and product types). The present study investigates overall affective/cognitive

matching effect among advertising message appeal, information processing style, and product type. This attempt can provide researchers and practitioners with a more useful approach to explaining when and why to use which appeal than has been offered in the past.

It has been widely agreed that an affective or cognitive attitude can be determined by the relative dominance of either affect or cognition to the other. Most research concerning attitudinal responses with respect to affect and cognition has focused on differential effects depending on their relative dominance (Anand et al., 1988). That is, in some cases the cognitive component may be dominant, while in other cases the affective component may be the primary basis for attitude formation or change.

Further, researchers suggested that affect and cognition may interact with each other (Fazio, 1990; Reed & Ewing, 2004). Attitudes can be formed and changed by different combinations of affect and cognition, because individuals may process information in a primarily affective way, in a primarily cognitive way, or in a combination of both ways (Zajonc & Markus, 1982). Edwards (1990) suggested that individuals are likely to use both affective and cognitive processing because the two constructs (affect and cognition) work independently as well as interdependently at the same time. In this vein, Sojka and Giese (1997) examined an interaction between affective processing and cognitive processing. The results showed four types of processing styles depending on individuals' preferences for information processing style (high cognitive but low affective, high affective but low cognitive, high in both, and low in both).

It has been also suggested that two focal message strategies (called affect/cognition, informational/transformational, or think/feel) can interact with each other and work at the same time. According to Puto and Wells (1984), the two constructs (informational and transformational) are "exhaustive but not mutually exclusive"; therefore, the two types of

advertising messages can be placed into one of four categories (informational, transformational, high in both, or low in both) considering the interaction. Vaughn (1980) suggested that effective advertising may contain both thinking and feeling elements. Likewise, researchers proposed that some products can be classified in both affective and cognitive dimensions simultaneously: some products such as the family car can be placed on both dimensions of think and feel at the same time (Berger, 1986); some product categories may be high or low on both functional and hedonic components (Chaudhuri & Holbrook, 2002).

Accordingly, considering interaction between affective and cognitive aspects, we can conclude that advertising messages, information processing style and products may be classified into more than two types. However, relatively little attention has been given to the interaction and to underlying mechanisms of relationships among the three key variables (advertising message appeals, information processing styles, and product types) caused by the interaction. This study explores how individuals' attitudinal responses to advertisements are affected by the affective/cognitive interaction with respect to the relationship among the three factors.

Purpose of the Research

The primary purpose of this study is to examine differential attitudinal responses to advertisements in terms of the match or mismatch among advertising message strategy, information processing style, and product type. Considering the interaction between affect and cognition, the three main constructs can be classified into three or four categories. Advertising message strategies are categorized into three types--informational, transformational and dual (both informational and transformational) appeals. Information processing styles are classified into four types--thinking, feeling, combination, and passive processors--based on the framework

by Sojka and Giese (1997). And, product types are categorized into three types (think, feel, and combination products).

This research partially replicates a study by Ruiz and Sicilia (2004), but proposes variations that place it in a broader advertising context. Ruiz and Sicilia investigated matching effects between advertising messages and information processing styles, based on the framework by Sojka and Giese (1997). Their results indicated that the match between ad message and information processing style was more effective than a mismatch strategy as it affected attitude toward the brand, purchase intention, and brand choice. However, they focused on three information processing styles, excluding passive processors in their study; thus, they did not articulate the matching effect between different advertising message strategies and all four information processing styles. In addition, they addressed their research hypotheses by using only one product category--a compact camera, which was conceived as a cognitive product in their study. Considering that product type may be an important moderator between advertising and attitude (Aurifeille et al., 2001) and that products can be classified into more than two types by the interaction between affect and cognition (Chaudhuri & Buck, 1995; Chaudhuri & Holbrook, 2002), it may be worthwhile to investigate the differential effect of advertising messages depending on product types in research that studies the affective/cognitive matching effect. Accordingly, the present study investigates the matching effect between ad message and all four processing styles including passive processors and also examines the relationships of product type to message strategy and to information processing style, depending on three different types of product--think, combination, and feel product. This more comprehensive approach could provide useful insights for researchers to understand how the three constructs interact as well as for practitioners to develop more effective message strategies.

In summary, the specific objectives of this study are as follows. Advertising effectiveness is defined in this paper in terms of the following five criteria: attitude toward the ad, attitude toward the brand, purchase intention, reaction profile, and unaided recall of the brand name.

- First, to determine whether the match between advertising message strategies (informational, dual, and transformational advertisements) and individual's information processing styles (thinking, feeling, combination, and passive processors) is more effective than the mismatch.
- Second, to determine whether the match between advertising message strategies and product types (think, feel, and combination product) is more effective than the mismatch.
- Third, to determine what combination of affect and cognition among the three constructs (advertising message appeals, processing styles, and product types) is most effective.
- Fourth, to examine whether and how passive processors differently respond to each type of advertising appeal. Given anticipated differential response patterns, which combination of advertising appeals and product types is most influential to them?

Chapters and Organization

Chapter 2 presents a review of the literature that is relevant to the affective/cognitive matching effect. Chapter 3 presents research hypotheses and research questions derived from the related literature. Chapter 4 describes the details of the research method including the research design, measurement of constructs and two pretests. Chapter 5 reports the final results of the study. Chapter 6 summarizes and discusses the research findings, presents implications, and offers recommendations for future research in this area.

CHAPTER 2

LITERATURE REVIEW

Attitudes have been an important research subject in persuasion research because they help explain and predict behavior (Haddock & Zanna, 1993). Most research concerning attitude has largely focused on two basic components of attitude (affect and cognition) in terms of the formation and the change of attitude (Drolet & Aaker, 2002). One of the primary purposes of attitude research is to examine the relationship between persuasive messages and attitude (Petty & Cacippo, 1986). The two attitudinal constructs (affect and cognition) have also been a popular means for categorizing types of persuasive messages (e.g., advertising messages) (Fabrigar & Petty, 1999; Roselli et al., 1995). The constructs have also influenced the classifications of individual characteristics and product types (Aurifeille et al, 2001; Loef et al., 2001), which are two key moderating variables that may affect the relationship between advertising messages and the formation and change of attitude.

The Predictive Power of Attitude

Attitude is defined as "an individual's general affective, cognitive and intentional responses toward a given object, issue, or person" (Fishbein & Ajzen, 1975). An attitude is viewed as "an overall evaluation of a stimulus object which is based on affective, cognitive, and behavioral information" (Zanna & Rempel, 1988). Attitude is usually conceptualized as "multi-component entities, which are based on both cognition and affect" (Tesser & Shaffer, 1990).

These definitions commonly show an attitude is the way we think, feel, and act toward some aspects of our environment such as an advertising, television programs, and product.

Attitude researchers have largely agreed that an attitude is a multicomponent perspective encompassing affective, cognitive, and behavioral responses: feelings about the object, cognitions about an object, and behavioral tendencies toward the object (Petty, 1995; Wood, 2000). According to the definitions from Hawkins et al. (1995), "(1) the affective component refers to emotions and feelings associated with the attitude object. The emotions or feelings are expressions of the results of an emotional or affective evaluation of the object. This overall evaluation may be simply a vague, general feeling developed without cognitive information or beliefs about the given object. (2) The cognitive component is generally conceived of as containing attributes, judgments, and beliefs about the objects. Many beliefs about attributes are evaluative in nature. It is important to be aware of that beliefs need not be correct or true; they only need to exist. (3) The behavioral component of an attitude is an individual's tendency to respond in a certain manner toward an object or activity. The behavioral component provides responses, tendencies, or behavioral intentions. Individuals' actual behaviors reflect these intensions as they are modified by the situation in which the behavior will occur." It is less likely to be attributing specific than are either beliefs or affect because behavior is generally directed toward an entire object (Berger & Mitchell, 1989). In conclusion, an attitude consisting of three components (affect, cognition, and behavior) is an individual's overall evaluation about a given attitudinal object.

Attitudes, which are thought out and salient, should be better predictors of behavior than fuzzy attitudes that are not salient because attitude reports (as a global evaluation) are based on whatever aspect of the attitude is salient, when the report is given (Millar & Tesser, 1986). If

affect is salient, then the attitude report will reflect an individual's feelings about the attitude object; and if cognition is salient, then the attitude report will reflect an individual's beliefs about the object. That is, the component of attitude that is salient indicates the relative contribution of affect/cognition toward the attitude (Drolet & Aaker, 2002). Therefore, some types of evaluation may be more cognitively driven and other types may be more affectively driven.

There are also a number of predominant or moderating factors that would make either the attributes or the feelings about the object evoke more importance in directing behavior. There is a tradition for attitude researchers to investigate the sources of information that are most influential on attitudes (Norman, 1975). Moreover, there have been attempts to specify psychological processes that influence attitude formation and change (Millar & Tesser, 1992). In these research streams, the consistency between responses to the given object and the attitudes formed has been considered as the attitude's predictive power that can guide behavior (Haddock & Zanna, 1993).

Persuasive Messages and Attitude

We acquire our attitudes from a wider variety of sources such as newspaper articles, television news, teachers, friends, famous people, or even billboards. As we receive more information from numerous sources, our attitudes may change or become more complex. However, attitude change is essentially based on persuasion, no matter what the source of information is. Accordingly, most attitude research has focused on persuasive messages including advertising messages (Drolet & Aaker, 2002).

In attitude research, it has long been assumed that different types of persuasive messages would have different effects on attitude change (Roselli et al., 1995). The underlying structure of

attitudes can be analyzed along two dimensions; affect and cognition (Zanna & Rempel, 1988). The distinction (an individual's attitude to a given object is largely based on either cognition or affect) has also been a popular means of differentiating types of persuasive communication (Fabrigar & Petty, 1999). This parallel classification elicits the question that if attitudes can be classified as either affective or cognitive, then what type of persuasive message will be more effective in forming or changing each type of attitude? Many studies have examined how different types of arguments change different types of attitudes in terms of their affective and cognitive basis (Edwards & von Hippel, 1995), and empirical research has demonstrated that different types of persuasive message would have different effects on the formation and the change of attitude (Edwards, 1990; Fabrigar & Petty, 1999; Millar & Millar, 1990; Miller & Tesser, 1992)[1].

Moderating Factors between Persuasive Messages and Attitude

The change of attitudes by persuasive messages depends on the individual and the situation (Fazio et al., 1989). Researchers have investigated when and why to use which appeal to form and change attitudes by attempting to examine factors moderating between advertising messages and attitudes. This research on attitude change has followed two major directions; attitude results mainly from consumer characteristics or from situational elements (Anand et al., 1988). Generally, it found that attitudes are more stable when they are based on consumers' personality-type preference or profile (Alba & Hutchinson, 1987) but attitudes may vary across

[1] The studies were largely focused on rational versus emotional message types (Millar & Millar, 1990). The message types are defined as follows: *rational* type advocates informative messages that provide relevant details, facts and figures; and *emotional* type refers to an attempt to link decisions to psychographic needs of individuals.

situational variables such as involvement, purchase environment, or product type (Park & Young, 1985; Park & Young, 1983).

Individual characteristics and attitude

Consumer behavior researchers have reported that different personal profiles and processing styles among consumers may lead to variations in the manner in which people respond to advertising appeals (Moore et al., 1995; Ruiz & Sicilia, 2004). There is a long tradition focused on investigating the relationship between personality and advertising stimuli with respect to the two constructs of affect and cognition (LaBarbera et al., 1998). Alba and Hutchinson (1987) proposed that attitudes that are based on consumers' style or profile are more permanent than those based on situational elements. According to Haddock and Zanna (1993), there are individual differences in the tendency to use affective and cognitive information in guiding attitudes.

Due to unique motivations, personalities, past experiences, and physical conditions, individuals may evaluate the same message differently. Some individuals may have a positive feeling toward a message, while others could respond with a negative reaction to the message. Some individuals, when exposed to an emotionally charged advertising appeal, may exhibit a tendency to experience their emotions with greater magnitude of intensity. Similarly, some individuals may exhibit a greater tendency to engage in and enjoy thinking when exposed to an advertisement (Aaker et al., 1986). This personality-type difference may produce different styles of information processing to a given message (LaBarbera et al., 1998). There have been attempts to investigate the extent to which the two types of persuasive communications change attitudes by different processes (Chen & Chaiken, 1999; Petty & Wegener, 1999; Roselli et al., 1995).

Research concerning the relationship between individual characteristics and advertising appeals has largely focused on the differential effect depending on the distinction between affect and cognition (Lepkowska-White et al., 2003). Researchers have addressed whether affectively or cognitively based persuasion is more potent when the nature of the appeal matches or mismatches the basis of the attitude (Edwards 1990; Edwards & von Hippel 1995; Fabrigar & Petty, 1999; Messé et al., 1995; Millar 1992; Millar & Millar 1990).

Further, some researchers have suggested that affect and cognition tend to work simultaneously. Individuals differ in their propensity to rely on affective, cognitive, or both systems to process information (Zajonc, 1980; Zajonc & Markus, 1982). That is, it was conceptualized and supported that the relationship between affect and cognition is not only independent but also interactive (Ruiz & Sicilia, 2004; Sojka & Giese, 1997). Considering the interaction between affect and cognition, Sojka and Giese proposed that individuals' information processing styles can be classified into four types: high in both thinking and feeling, high thinking but low feeling, high feeling but low thinking, and low in both. Following the framework of Sojka and Giese (1997), Ruiz and Sicilia (2004) explored the relationship between processing styles and ad appeals assuming the interaction between affect and cognition. They supported the notion of Sojka and Giese (1997), which suggested some individuals were more likely to process information using both affective and cognitive components, and individuals responded to different types of advertising appeals in different ways depending on their processing styles.

Product characteristics and attitude

Some researchers conceptualized that attitudes result from situational variables such as involvement, purchase environment, or product type (Park & Young, 1985). Among the situational variables, this study focuses on product type. Research concerning attitude change depending on product type in terms of the affective/cognitive distinction has been addressed for years (Aurifeille et al., 2001; Dubé et al., 1996; Loef et al., 2001; Ratchford, 1987; Vaughn, 1980). Since products are evaluated in the context of a specific situation, a consumer's affective reaction to a product (as well as beliefs about the product) may change as the situation changes.

Dubé and her colleagues (1996) suggested that attitudes toward certain products may be predominantly cognitive or affective. According to Aurifeille et al. (2001), both affective and cognitive components of attitudes vary according to product characteristics. Moreover, advertising planning models, such as the FCB grid (Vaughn, 1980; 1986) and the Rossiter-Percy grid (Rossiter & Percy, 1987), dimensionalize attitudes and products using the *think/feel* or *informational*/*transformational* dimensions respectively. These models suggested a relative effectiveness in attitude change depending on the relationship between advertising appeals and product types.

There are also functional approaches to investigate the relationship between ad appeals and product types (Claeys et al, 1995; Johar & Sirgy, 1991; Shavitt, 1989). Researchers in this stream have focused on two distinctive needs of consumers: *utilitarian* need and *value-expressive* need. Based on those needs, Lepkowska-White et al. (2003) categorized product into two types (*informative* and *affective* products). On one hand, informative products fulfill very important utilitarian needs of consumers. Consumers intensely process advertising information related only to consumer utilitarian needs that these products satisfy. Thus, consumers are more

likely to choose utilitarian information (a functional appeal). On the other hand, affective products are purchased to fulfill expressive needs that are very important to the consumers. In this vein, researchers suggested that advertising appeals should be matched with product types to generate greater effectiveness. In addition, in the relationship between consumers' product involvement levels and ad messages, Johar and Sirgy (1991) and Sirgy and Johar (1992) proposed that for consumers who are highly involved with a product, utilitarian information is more effective, and for consumers who are not involved with a product, value expressive ads are more persuasive. This research indicates that the type of information consumers seek depends on the consumer involvement and the types of needs the product satisfies.

Matching/Mismatching Effects

With respect to the effects of persuasive messages, researchers have investigated the successful combinations between messages and individual characteristics (LaBarbera et al., 1998) or between messages and product types (Loef et al., 2001). Most research concerning the successful combination largely focused on whether a match (mismatch) between persuasive messages and relating factors would be more effective in changing attitude than a mismatch (match) (Farbrigar & Petty, 1999).

There have been attempts to examine matching effects between messages and personalities or between messages and products. However, the effects of match are in doubt. Some suggested that a persuasive message would be more effective when the message matches individual's characteristic or product type (Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999; LaBarbera et al., 1998). Conversely, others showed that a message tends

to be more effective when the message mismatches individuals' characteristic or product type (Dubé et al., 1996; Millar, 1992; Millar & Millar, 1990; Millar & Tesser, 1986).

Although the results of previous research about the matching (mismatching) effect were controversial, there was general agreement about the conceptual usefulness of distinguishing between affective and cognitive bases of attitudes and persuasion (Wood, 2000). Further, there was another consensus that affective and cognitive processes in attitude formation are not completely dichotomous, although affect and cognition are distinctive in nature (Edwards, 1990). Indeed, both affective and cognitive processes contribute to attitude formation--though frequently to varying degrees. Edwards and von Hippel (1995) suggested that attitudes can be based on affective and cognitive information, either separately or in combination. Although attitude theory conceptually allows having "pure forms" of affective-based or cognitive-based attitudes, it is unlikely to take place in reality. This is because, for example, the purest appearances of affect-based attitude should be formed by pure sensory input without mediation by any mental processes (Zajonc, 1980). Therefore, most attitudes are composed of both affect and cognition.

In the same vein, Puto and Wells (1984) classified advertising messages into two categories (*informational* and *transformational*), which correspond to the cognitive and affective dimensions, respectively. They suggested that an advertisement can be placed into one of two main categories. However, the distinction does not indicate that an advertisement is solely either informational or transformational because "the two constructs (informational and transformational) are exhaustive, but not mutually exclusive" (Puto & Wells, 1984).

The agreement was also found in the literature regarding the FCB grid associated with consumers' evaluation of product characteristics in terms of the distinction, *thinking* and *feeling*

(thinking corresponds to cognitive and feeling corresponds to affective). Citing Levy's (1981) assertion that the, "brain is actually a unified system", Vaughn (1986) suggested that the consumer "integrates complex stimuli and adroitly manages both information and emotion", even though "thinking and feeling are a continuum in the sense that some decisions involve one or the other" (Vaughn, 1980). Berger (1986) also suggested that "we recognized that think and feel were not really one continuum, but two" because an individual may have a lot of *think* and a lot of *feel* at the same time as people do in a family car; an individual may have little of either; or, an individual may have a lot of one and a little of the other. Furthermore, Ratchford (1987) advocated that "thinking and feeling can clearly exist simultaneously because more than one motive may be operational" in a given purchase situation, even though thinking and feeling are basically separate dimensions and products can range on a single continuum from low to high on each.

The aforementioned opinions are exactly parallel to the consensus that "cognitive and affective components of attitude or process are distinctive, but not dichotomous" (Edward, 1990) and "informational and transformational messages are exhaustive, but not mutually exclusive" (Puto & Wells, 1984). Ratchford (1987) said that "the dimension of the grid measured relative amounts of think and feel." This can be the plausible answer to why FCB grid collapses *think* and *feel* into one dimension although they are distinctive. Accordingly, if *think* dominated in the purchase decision, the product will be on the left of the grid; if *feel* dominated, the product will be on the right; if both *think* and *feel* are present in equal amounts, the product will be in the middle (Claeys et al., 1995).

As stated before, the results of the matching/mismatching effect between messages and personalities or products are still controversial. Depending on their research results, scholars

differently reasoned why match (mismatch) is more effective than mismatch (match) and differently explained how to understand the implications from the matching (mismatching) effect. On one side, some researchers (Petty & Wegener, 1998; Ratchford & Vaughn, 1989; Vaughn, 1980) supported the matching effect based on findings that persuasive messages which match product can obtain greater advertising effects than mismatch. Edwards (1990) proposed one explanation for matching effect in terms of different dimensional structures of affective/cognitive attitude. Conversely, other researchers reasoned that mismatching is more effective than matching in terms of limiting the generation of counterarguments (Millar & Millar, 1990; Millar & Tesser, 1992; Petty & Cacioppo, 1986). Following this summary of the relative effectiveness of matching or mismatching strategies, the major studies conducted by each side are presented in greater detail. Table 2-1 contains an overview of each study discussed, which suggested the affective/cognitive matching effect.

Matching Effects of Affective/Cognitive Persuasion

Petty and Wegener (1998) suggested that "messages that match the underlying basis of the attitude are more effective than messages that mismatch". According to Petty and Wegener, "individuals would better recognize the cogency of the arguments presented", when the presented messages matched the basis of their attitude. Recognizing the coherence between the bases of attitudes and message arguments is more likely to generate an agreement with the arguments. Consequently, matched messages elicited more favorable thoughts and were rated as more persuasive (Lavine & Snyder, 1996; Petty & Wegener, 1998).

Table 2-1. Summary of Affective/Cognitive Persuasion Matching Effects

Research focus	Researchers	Variables & Attitude Objects	Results
Basis of attitude by Message type	Edwards (1990)	▪ Attitude (affective/ cognitive attitude toward certain objects) & persuasion (affective/cognitive persuasive messages) ▪ (Experiment 1) Using Chinese ideographs & photographs ▪ (Experiment 2) 3 fictitious brands: copier, insecticide & energy drink	▪ Match between message and attitude is more effective ▪ Affective-based attitudes are more influenced by affective message than cognitive message ▪ Cognitive-based attitudes show equal change under both forms of message
	Edwards & von Hippel (1995)	▪ Attitude (affective/cognitive attitude toward another person) ▪ Persuasion (affective/cognitive persuasive appeals)	▪ Match affective/cognitive message to attitude is more effective ▪ Affective message is more influential to affective-based attitudes toward persons than to cognitive-based attitudes
	Fabrigar & Petty (1999): Experiment 1	▪ Attitude (affect/cognition), persuasion (affective/cognitive) & attribute dimension of attitude object persuasion (taste/smell) ▪ Using a fictitious beverage brand	▪ Affective/cognitive persuasion matching is more effective than mismatching ▪ Affective appeal is more effective in changing affective attitudes than cognitive attitudes
Message type vs. Information processing style	Ruiz & Sicilia (2004)	▪ Ad appeal: informational, emotional, and both ▪ Processing style: thinking, feeling, or both ▪ Using 3 compact camera brands	▪ Match can generate more positive attitudes toward the brand, purchase intention and brand choice ▪ Informational ad appeal matched to thinking processors and informational-emotional ad matched to combination processors
Message type vs. Type of experience	Fabrigar & Petty (1999): Experiment 2	▪ For attitude formation, using a fictitious animal called a *lemphur* for controlling experience ▪ Attitude (affective/cognitive) ▪ Persuasion (affect/cognition)	▪ Affective message was more effective in changing affective attitudes than cognitive attitudes ▪ Affective/cognitive persuasion matching is effective even after controlling for the experience distinction
Message type vs. Product type	Shavitt (1989)	▪ Ad type: utilitarian & value-expressive appeals ▪ Product type: air conditioners, coffee, wedding rings, & American flags	▪ Match is more effective ▪ Functionally matched ads produce more favorable attitudes toward the brands they supported

The FCB grid postulated that the types of purchase decision vary depending on both levels of involvement and types of product (Ratchford & Vaughn, 1989). Think products are more likely to be evaluated logically and analytically, implying rational and sequential thinking; therefore, cognitively driven advertising messages are more effective to the consumers. Alternatively, feel products are more suitable to be evaluated emotionally, implying a synthetic and intuitive approach; therefore, affectively driven ad appeals are more effective. Vaughn (1980) suggested that the more the message strategy matches consumer's involvement and information processing based on product type, the greater the advertising will be internalized or accepted.

In another account, Edwards (1990) suggested that affective attitudes have a different attitudinal structure from cognitive attitudes. The dimensional difference between two attitudes may produce the discrepancy of responses to the different types of message appeals. Supporting the matching effects, Edwards speculated that affective attitudes have a unidimensional structure organized along a simple evaluative dimension (i.e., positive-negative fashion). Alternatively, cognitive attitudes have a more multifaceted structure based on discrete attributes. She suggested that "affective attitudes might be relatively impervious to cognitive persuasion because specific attributes can be readily assimilated into the existing evaluative structure or entirely discounted". An affective persuasive appeal, however, directly challenges the global evaluation. In contrast, cognitive attitudes are less susceptible to affective persuasion because such a unidimensional persuasive appeal only targets one of several dimensions on which the attitude is based. Similarly, cognitive persuasive appeals will only be successful to the extent that they directly target the distinct cognitive dimensions on which the attitude is based. One

potential implication of this explanation is that direct matching is only necessary for cognition, which by its nature is likely to be multidimensional.

Basis of attitude by message type

- *Edwards (1990)*: She investigated whether affective and cognitive means of persuasion are differentially effective in an attitude formation and change. Edwards conducted two experiments. In the first experiment, she used ten Chinese ideographs and ten photographs of female faces as means of attitude formation. Through manipulating the presentation sequence of the ideographs and photographs, she measured subjects' attitude toward the objects. After that, from each attitude basis, half of the subjects were exposed to an affective persuasion and the other half were exposed to a cognitive persuasion. Experiment 2 was a conceptual replication of the first one. Just like the first experiment, affective based and cognitive based attitudes were experimentally induced and subsequently subjected to either affective or cognitive types of persuasion. Also, as in Experiment 1, the attitude formation and persuasion manipulations involved varying the sequence of affective and cognitive processes. She used three fictitious consumer products: a portable copier, an insecticide, and an energy drink.

As a result, match was most effective in the research. Nevertheless, a relative matching effect was found; affective arguments were more influential than cognitive arguments. Affect-based attitudes exhibited more change under affective means of persuasion than under cognitive means of persuasion. For affective-based attitudes, affective message produced a primary and powerful influence on the individual, and the attitude was initially acquired with minimal cognitive appraisal. On the other hand, cognition-based attitudes exhibited equal change under both forms of persuasion. For cognition-based attitudes, domain-relevant information was

acquired first, and affective factors come into play only after, and as a result of, considerable cognitive appraisal.

- *Edwards and von Hippel (1995)*: As an extension of Edwards' (1990) research, Edwards and von Hippel investigated the relationship between affective/cognitive attitudes and affective/cognitive persuasive messages. They manipulated two types of attitudes that were either affective or cognitive in nature. They then examined how these initial attitudes are changed, using persuasion that was intended to be either primarily affective or cognitive. Two experiments were employed. The affective and cognitive initial attitudes and following persuasive messages have typically been manipulated by varying the order of affective and cognitive information presented about the attitude object (another person) for both experiments.

The results indicated that persuasive messages were likely to be more effective when the type of persuasive message matched the basis of the initial attitude than mismatch. Specifically, persuasion based on the 'affect→cognition' order was more effective in changing attitudes based on the 'affect→cognition' order than on the 'cognition→affect' order. Conversely, there was little tendency for persuasion with the sequence of the 'cognition→affect' order to generate more attitude change when attitudes were based on the 'cognition→affect' order than on the 'affect→cognition' order. This study showed the same evidence revealed in Edwards' (1990) research of 'a relative matching effect' favoring affect matching between attitudes and persuasion.

- *Fabrigar and Petty (1999, Experiment 1)*: This study also found that match is more effective than mismatch between type of persuasion and basis of attitude. To investigate relationship between the two, they conducted two experiments with a fictitious beverage brand

and a fictitious animal called a *lemphur* in order to control for the personal difference of experience about a given object.

In the first study using a beverage, they presumed that when participants' initial attitudes toward the beverage were formed by tasting it, the attitude should be based primarily on affect. Conversely, when their initial attitudes toward the beverage were formed by reading information about the taste of it, the attitude should be based primarily on cognition. They investigated a significant two-way interaction between attitude types (affect versus cognition) and types of persuasion (affective versus cognitive message) hypothesized that the match persuasions to attitudes along the affective and cognitive dimensions of attitudes ought to be more effective than mismatch between the two dimensions. Furthermore, they attempted to examine three-way interactions among attitude types (affect versus cognition), types of persuasion (affective versus cognitive) and attribute dimensions of attitude object persuasion (taste versus smell). They explored whether affective/cognitive matching effects can be weakened or reversed when attribute dimensions of the attitude object match or mismatch.

The research result provided evidence of an affective/cognitive persuasive message matching effect. Regardless of whether the taste/smell dimensions of attributes matched or mismatched the initial attitude, affective persuasion had greater influence on affective attitudes rather than cognitive attitudes. Similarly, there was a tendency that a cognitive appeal was more effective to change cognitive attitudes than affective attitudes, although this relationship was not significant. Therefore, there was a relative affective/cognitive matching effect.

Message type versus Personal characteristic

Message type vs. Information processing style

- *Ruiz and Sicilia (2004)*: They investigated whether consumers differ in the formation or change of their attitude as a function of the relationship between advertising appeals and information processing styles (affective, cognitive, and both). For the classification of information processing style, they took the framework of Sojka and Giese (1997). Sojka and Giese proposed, "Individuals are not solely relying on affect or cognition for all decision processing". Rather, there is an interaction among attributes (high or low) of the two-attitudinal components. This resulted in four types of information processing styles: (1) *thinking processors* (high cognitive, but low affective) who "generally prefer to think rationally and rely heavily on cognitive information like tangible and quantifiable product attributes such as price or length of warranty"; (2) *feeling processors* (low cognitive, high affective) who "heavily rely on affect, prefer some cues eliciting feeling, emotion, or liking a product"; (3) *combination processors* (high on both affect and cognition) who "are comfortable using either processing style"; and (4) *passive processors* (low on both), "this type of processing style is unclear".

Ruiz and Sicilia utilized three different print advertisements (informational, emotional, and informational-emotional ads) of compact cameras, and examined those ad appeals' relationship to three information processing styles (thinking processors, feeling processors, and combination processors) out of the four. The result suggested that ad appeals tended to be more effective when the nature of the appeal matched the individuals' information processing styles rather than mismatched to them. For thinking processors, informational ads produced higher ad effectiveness than other ads in terms of attitude toward the brand, purchase intention, and brand choice. For combination processors, informational-emotional ads and informational ads

generated greater ad effectiveness than emotional ads in terms of attitude toward the brand, purchase intention, and brand choice; while the different types of ads did not produced different ad effectiveness for feeling processors.

Message type vs. type of experience

- *Fabrigar and Petty (1999, Experiment 2)*: Messé et al. (1995) argued that the reason for the discrepancies in the previous results concerning affect/cognition persuasion matching effect (Edwards, 1990; Edwards & von Hippel, 1995; Millar & Millar, 1990) is because the matching effect was not due to affective/cognitive matching but to direct/indirect experience matching. In this vein, Fabrigar and Petty explored whether the persuasion matching effect observed in their first experiment (1999) could be attributed to a matching of direct/indirect experience with the attitude object rather than affective/cognitive persuasion. To investigate the relationship between type of persuasion and type of attitude controlling for the role of experience, they conducted an experiment with a fictitious animal called a *lemphur*, which was used as a control for individual difference by experience.

In the attitude formation phase, half of the participants were asked to read a message intended to evoke positive feelings about *lemphur*; the other half were asked to read a message consisting of positive information about it. The former was designed to form affective attitudes and the latter was designed to form cognitive attitudes. All participants were then exposed to a transformational message or an informational message that was designed to generate an unfavorable attitude toward the fictitious animal. Participants' responses were collected and analyzed for the study intended to exclude individuals' experience.

The second experiment also showed that the effects of affective/cognitive persuasion matching were greater than mismatching even after controlling for the direct/indirect experience. Interestingly, both experiments demonstrated a relative matching effect in favor of affect. Affective message was more effective in changing affectively based attitudes than cognitively based attitudes, whereas there was no definitive evidence that cognitive message was more persuasive in changing cognitively based attitude than affectively based attitudes. Although the tendency for cognitive message to be more successful against cognitive attitudes than affective attitudes was also present in both experiments, it was not statistically significant.

Message type versus Product characteristic

Functional Approach to Attitude

There has been another point-of-view for matching effects among persuasive messages, product types, and individuals' personality-type difference. Johar and Sirgy (1991) suggested that a match between argument types and attitudes toward products is more effective than a mismatch between them. They used two main constructs of utilitarian/value-expressive appeal, which were derived from the functional theory of attitudes (Katz, 1960). While the theory more focuses on the functions of attitude to fulfill rather than the formation or the change of attitude, some studies attempted to examine *when* a certain message would be effective and *why* it would be. In addition, the two utilitarian/value-expressive dimensions are very close to the cognitive/affective dimensions of message appeal and attitude. Therefore, it is quite useful to deal with some studies from the functional approach literature.

The functional approach proposed that persuasive communications should be successful to the extent that they directly address the psychological motivations underlying the targeted

attitude (i.e., *the functional matching effect*). By delineating the conditions under which persuasive messages will induce attitude change, this approach was primarily directed to the question of when persuasive messages will be effective. The approach provided an explanation of the underlying motivational dynamics of why such changes occur (Shavitt & Fazio, 1990; Shavitt, 1989) as well. According to the approach, attitudes are formed and maintained because of their influence in providing the person with various forms of desired instrumental or expressive psychological benefit.

- *Johar and Sirgy (1991)*: They defined value-expressive advertising appeals as ad messages that "hold a creative objective to create an image of the generalized user of the advertised product (or brand)", and utilitarian advertising appeals as "creative strategies that highlight the functional features of the product (or brand)". Additionally, they argued that value-expressive and utilitarian ad appeals may influence advertising persuasion through two different psychological processes: self-congruity and functional congruity. Self-congruity refers to the match between the consumer's self-concept and the product's value-expressive attributes (Johnson, 1984; Myers, 1976). According to this viewpoint, the greater congruence between product images and consumer's actual self-images, the greater likelihood of persuasion (Sirgy, 1985). Alternatively, functional congruity refers to the match between the consumer's ideal attributes, which are the criteria used to evaluate the actual performance characteristics of the product, and the beliefs about product utilitarian attributes (Johar & Sirgy, 1991; Johnson, 1984; Myers, 1987). Also, when the congruence between the consumer's utilitarian beliefs about the actual brand and the ideal beliefs about the brand is greater, the persuasion effects of the message will be greater.

According to the model of Johar and Sirgy, value-expressive advertising appeals are more effective when the product is value-expressive, while utilitarian appeals are more effective when the product is utilitarian. When the product is value-expressive, audience persuasion is mostly influenced through self-congruity. Alternatively, when the product is utilitarian, audience persuasion is mostly influenced through functional congruity. Consequently, advertising practitioners can select the proper appeal (utilitarian vs. value-expressive) by matching the product with the consumers' way of persuasion (self-congruity vs. functional congruity).

- *Shavitt (1989)*: Through a series of studies about the attitude functions matched to the types of products, Shavitt addressed the implications of product functions for the persuasive impact of utilitarian and value-expressive messages. She suggested that functionally matched advertisements elicited more favorable attitudes toward the brands they supported. Appeals matching to the product's utilitarian versus value-expressive function were more effective than mismatched appeals. Shavitt demonstrated that attitudes toward products that were predominantly associated with a value-expressive function (e.g., wedding rings and American flags) were based primarily on beliefs about what the products symbolize and what they express to others. Alternatively, attitudes primarily related to a utilitarian function (e.g., air conditioners and coffee) were typically based on beliefs about product attributes and the rewards and punishments fundamentally associated with them.

Mismatching Effects of Affective/Cognitive Persuasion

An explanation for a mismatching effect is based on the notion that when a persuasive appeal directly matches the underlying nature of the attitude, it threatens the way in which an individual has typically thought about the object and thus challenges the adequacy of the

individual's evaluation. The threat can motivate the individual to counterargue the message (Millar & Millar, 1990). In contrast, when the persuasive appeal does not directly match the underlying nature of the attitude, the appeal will not directly threaten the way in which an individual has generally thought about the attitude object (Millar & Tesser, 1992). Thus, there will be little motivation to counterargue the appeal, and this should allow for more attitude change (Wood, 2002).

The counterargumentation is also associated with personal characteristics such as personal ability and motivation to process persuasive messages (Petty & Cacioppo, 1986). Petty and Cacioppo suggest counterarguments are more likely to occur according to individual's ability and motivation to process a message. They proposed that when consumers have both the ability and the motivation to process a message, they are likely to elaborate on it. When the advertising message is consistent with consumers' attitude basis, the consumer has a greater ability to counterargue. Assuming the consumers' motivation to process the message is high, the likelihood that the consumer will counterargue will also be high and a persuasion attempt based on a match strategy will be likely to fail. However, if the consumers' motivation to process the message is low, it will be easier for the consumer to comprehend advertising messages consistent with their attitude basis due to the existence of a prior schema within which to fit the new information. Further, the lack of motivation will reduce the likelihood of critically thinking about the new information, reducing the likelihood of counterargumentation (Hastak & Olson, 1989). Thus, when processing motivation is low, a match strategy is likely to be superior. Table 2-2 shows an overview of research suggested the affective/cognitive mismatching effect.

Basis of attitude by message type

- *Millar and Millar (1990)*: The researchers suggested that mismatch was most effective in relation of attitude types to argument types. They proposed that attitudes might be classified as being either primarily affective-based or primarily cognitive-based. Arguments would cause more attitude change when they emphasized a component (affective or cognitive) different from the component on which the attitude was based (i.e., a mismatch between persuasive messages and attitudes). They further proposed that a message emphasizing the same component (i.e., a match) would motivate more counterarguing than a message emphasizing a different component (i.e., a mismatch). They used print advertisements of six beverages and the thought-listing method to examine their hypotheses via three experiments.

Table 2-2. Summary of Affective/Cognitive Persuasion Mismatching Effects

Research focus	Researcher(s)	Method	Results
Basis of attitude by message type	Millar & Millar (1990)	▪ Print ads of 6 beverages ▪ Attitudes were classified as affective/cognitive ▪ Exposed to affective/cognitive persuasive messages	▪ Mismatch is more effective than match ▪ When the basis of the attitude is matched, individuals are more likely to generate counterarguments, thus it may bring out little attitude change
	Dubé, Chattopadhyay, & Letarte (1996)	▪ They assessed consumers' bases of attitude for food products and, ▪ Content analyzed TV ads for food ▪ Then, examined the degree of matching between ad and attitude	▪ No match between ad appeal of TV commercials and consumers' attitude ▪ For food products, attitudes were primarily based on affect whereas ads typically utilized cognitive-based appeals

In the first experiment, subjects' attitudes toward those beverages were classified as predominantly affective or cognitive based on the responses to the statement about each beverage. Subjects were then exposed to one print advertisement about one of the beverages.

Two advertisements were selected for each of the six beverages: one represented an emotional argument and the other represented a rational argument. Subjects were randomly assigned to either a rational ad or an emotional ad. That is, an affective persuasive message was given to half of the subjects and a cognitive persuasive message was given to the other half. Subjects reported their attitudes toward each of the beverages after exposing the messages. From the two experiments, evidence for mismatching effects was obtained. That is, rational messages were likely to generate greater attitude change when attitudes were affectively-based than cognitively-based. Conversely, emotional appeals tended to produce more attitude change when attitudes were primarily cognitive than affective.

In the third study, subjects were asked to complete some analytic puzzles. In order to classify participants' attitudes, the researchers asked half of the participants to focus on how they thought the way they did about each puzzle. The other half of the participants was asked to focus on how they felt while performing each puzzle. The former condition was presumed that the attitude was more cognitive and the latter condition was assumed that the attitude was more affective. After solving the puzzles, different persuasive messages consisting of cognitive appeals or affective appeals were given to participants. Evidence from the attitude measure for the puzzles showed a mismatching effect between affective/cognitive persuasions and attitudes again.

As a result of their study through three experiments, rational arguments was more effective in changing affective-based attitudes whereas emotional arguments were more effective in changing cognitive-based attitudes. They suggested that when the basis of the attitude is "attacked" (with the same message type as attitude: i.e., match), individuals were strongly motivated to produce counterarguments, and thus may elicit little attitude change.

- *Dubé, Chattopadhyay, and Letarte (1996)*: Dubé and her colleagues studied whether the types of ad appeal of TV commercial match to the bases of attitude for food products. They attempted to assess whether advertisers follow FCB recommendation for the relationship between message types and product types. First, they assessed consumers' bases of attitude for food products, and then content analyzed TV ads for food, and examined the degree to which there was a fit between the attitude bases reported by the consumers and the appeal used to persuade them to buy.

As a result, attitudes were primarily based on affect whereas the commercials typically utilized informational appeals regardless of kinds of food products. The research showed that there was actually no match between the appeal types of TV commercials advertised and consumers' bases of attitude for food products. Therefore, they concluded that advertisers did not follow the FCB recommendation in the selection of message strategy. They suggested that persuasive attempts matched attitude bases are more likely to be counterargued and resisted by consumers compared to those that do not match. Interestingly, they further argued, "advertisers tended to adopt mismatch strategy because the match strategy may face to a high probability of counterarguments".

The Moderating Role of Experience

There have been attempts to resolve the inconsistency between evidence for the matching effect and the mismatching effect. Messé et al. (1995) and Millar (1992) investigated the role of experience moderating the relationship between persuasive messages and attitude change. Messé et al. explored how direct/indirect experiences moderate the relationship between persuasion and attitude; Millar studied how the degrees of direct experience with the attitude object moderate the

matching effect. The research of Messé et al. and Millar suggested that the matching effects could be conceived as experiential matching effects rather than affect/cognition matching effects. Nevertheless, the results from both studies were still inconsistency; Messé et al. (1995) showed matching effect but Millar revealed mismatching effect with experiences. The summaries and conclusions by each are presented. Table 2-3 contains an overview of research that proposed alternative matching effect in terms of experience.

Table 2-3. Summary of Alternative Matching Effects by Experience

Research focus	Researcher(s)	Method	Results
Message Type vs. Type of experience	Messé Bodenhausen, & Nelson (1995)	▪ Experience type: direct/indirect experience ▪ Message type: direct/indirect experience message	▪ Match between attitude and persuasion ▪ Attitude formed by direct experience was more susceptible to direct experience persuasion than indirect one ▪ Attitude formed by indirect experience was equally susceptible to both types of persuasions
	Millar (1992)	▪ Amount of direct experience: high/low experience ▪ Message type: affective/ cognitive reason for liking the puzzles	▪ Mismatch is more effective ▪ Under high level of experience, cognitive reasons are more effective than affective ones

Direct/indirect experience in the change of attitude

Messé, Bodenhausen, and Nelson (1995) alternatively proposed that the previous controversial results of affective/cognitive matching effect and mismatching effect (e.g., Edwards, 1990 versus Millar & Millar, 1990) could be resolved by reconceptualizing the prior studies in terms of direct/indirect experience. They argued that previous studies suggesting

affective/cognitive persuasion matching effects have used inappropriate manipulations in their experiments. For instance, affective information was provided by tasting or smelling a beverage, and cognitive information was provided by reading a message about the beverage (e.g., Edwards, 1990). That is, affective information was presented through direct experience but cognitive information through indirect experience with the attitude object. Consequently, these matching effects could be conceived as direct/indirect experience matching effects rather than affective/cognitive persuasion matching effects.

Likewise, they argued that experiments demonstrating mismatching effects also have some limitation in the experiments. That is, individuals' initial attitudes were likely to have been based on direct experience, but the persuasive appeals have always been written information about the attitude object (e.g., Millar & Millar, 1990). Therefore, they insisted that "the studies favoring mismatching involved an attempt to overcome direct experience with indirect experience".

Messé et al. (1995) conducted an experiment in which they crossed affect and cognition with direct/indirect experience in the stages of both attitude formation and attitude change. The results indicated that the affect/cognition distinction had no influence in the attitude formation or change. Instead, a significant interaction between direct/indirect experience at the phase of attitude formation as well as of attitude change was obtained. This interaction demonstrated that direct experience persuasion (e.g., tasting a beverage) had greater influence on attitudes formed by direct experience than attitudes formed by indirect experience. Nevertheless, attitudes formed by indirect experience were equally susceptible to direct experience and indirect experience persuasion (reading a passage about a beverage).

The degree of experience with the attitude object

Millar (1992) studied matching effects in terms of the distinction of high and low experience. He examined whether the amount of direct experience with the attitude object moderated matching or mismatching effects. It was postulated that mismatching effects should occur when there was extensive direct experience with the object because such experience should help a person to effectively generate counterarguments to matching messages. In contrast, if the attitude was based on little direct experience, matching effects were hypothesized to occur. Millar reasoned that this is because it is more difficult to generate counterarguments in defense of an attitude based on little direct experience.

The research results indicated a mismatching effect under high levels of direct experience (i.e., the cognitive reasons were more effective than the affective reasons) and a nonsignificant matching effect under low levels of direct experience. Participants were asked to focus on how they felt while completing a series of puzzles in the experiment. Given that, participants received messages that provided either informational or emotional reasons for liking the puzzles. In the experiment, all attitudes were assumed to be affective in nature. This limits the generalizability of the research results; there was no cognitive attitude condition, thus it is not clear if the same pattern of results would have occurred for cognitive attitudes.

Interaction between affect and cognition

Advertising message strategy

In advertising, message strategy is defined as what is to be communicated in an advertisement (Laskey et al., 1995). Taylor (1999) distinguished between message strategy and creative tactics and execution: “message strategy generally refers to what to say in an ad, while

creative tactics and execution refer to how it is said". That is, the message strategy indicates an intended message to influence advertising's effectiveness in an advertising or a marketing communication campaign; alternatively, the tactics and execution specify how well the message is conveyed.

There have been attempts to classify the types of message strategies. They can be categorized largely into two types: two-group typologies (Aaker & Norris, 1982; Batra et al., 1996; Johar & Sirgy, 1991; Puto & Wells, 1984; Vaughn, 1980) or multi-group typologies (Frazer, 1983; Laskey et al., 1989; Simon, 1971). Even though scholars have proposed various typologies of message strategy, most have agreed that the key approach of advertising is first placed in one of two basic strategies (e.g., informational versus transformational) based on the main focus (Laskey et al., 1989).

One of the main message strategies could be employed depending on whether the message appeal primarily focuses on attributes and benefits of the product or the image and feelings toward the brand (Laskey et al., 1995). Vaughn (1980) suggested *thinking* and *feeling* as two types of message strategies in the FCB grid. Taking the distinction of Holbrook (1978), Vaughn (1986) defined thinking strategy as "objectively verifiable and logical descriptions of tangible product features" and feeling strategy as "emotional and subjective impressions of intangible aspects of the product". Aaker and Norris (1982) used two sets of terms to define message strategies: *informational/rational/cognitive* and *image/emotional/feeling*. Puto and Wells (1984) classified message strategies into *informational* and *transformational* ad content. Specifically, informational advertising provides consumers with factual and relevant brand data in a logical manner such that they have greater confidence in their ability to assess the merits of purchasing the brand after having seen the advertisement. Alternatively, transformational

advertising associates the experience of using the advertised brand with a unique set of psychological characteristics that normally would not be related with the brand experience to the same extent without exposure to the advertisement. Liebermann and Flint-Goor (1996) used the terms, *rational* and *emotional* approaches. Rational approaches primarily rely on arguments or reasons about brand attributes; alternatively, emotional approaches mainly rely on emotions or feelings such as the attempted evocation of warmth and affection, excitement, or the use of humor and fear. Johar and Sirgy (1991) categorized two types of message strategies by using the terms, *utilitarian* and *value-expressive*. They defined utilitarian advertising appeals as basically focusing on informing consumers of one or more key benefits that are perceived to be highly functional or important to target consumers; alternatively, value-expressive appeals are image strategies, which hold a creative objective to produce an image of the generalized user of the advertised product.

In short, regardless of the various expressions of the two message strategies, one of the two strategies (thinking; informational; informational /rational/cognitive; utilitarian; or rational) advocates informative messages that provide relevant details and facts based on specific attributes of the advertised product (or brand), whereas the other (feeling; transformational; image/emotional/feeling; value-expressive; or emotional) mainly rely on evoking emotion or feeling and psychographic needs of consumers. Among those, the terms, *informational* and *transformational* suggested by Puto and Wells (1984), are used in this study because the terms provided clearer and richer concepts and have been utilized in many studies (e.g., Laskey et al., 1995; Rossiter & Percy, 1997; Vanitha et al., 1996).

An advertisement can be placed into one of the two broad categories--informational and transformational, but the two terms do not imply that an advertisement is solely either

informational or transformational. Rather, they refer to one's relative dominance to the other. According to Puto and Wells (1984), an advertisement can be categorized as either 'primarily informational' or 'primarily transformational' based on the main focus of the key message. That is, when the main message focuses on specific factual attributes of the advertised product, the advertisement is primarily informational and when the main message concentrates on creating images or favorable feeling to the product, the advertisement is primarily transformational.

However, not every advertisement can be put into either one of the two categories of main message strategies because the two constructs (informational and transformational) are not mutually exclusive (Puto & Wells, 1984). Actually, no message strategy is exclusively informational or transformational. Instead, both informational and transformational elements in the advertising message may exist at the same time. In fact, Vaughn (1986) suggested that advertising may contain both informational and transformational elements to be effective, or advertising may be neither informational nor transformational. According to Puto and Wells (1984), advertisements can be classified as putting into one of four basic categories: (1) high transformational/low informational, (2) low transformational/high informational, (3) high transformational/high informational, and (4) low transformational/low informational. This classification indicated that the third type and fourth type can contain almost equal strength and/or number of both informational and transformational elements. Although a fourth ad type can be conceptually categorized, it is rarely seen in reality because it is unlikely that advertisers would utilize an ad containing a small amount of factual information as well as little emotional contents in order to persuade consumers[2]. Consequently, when considering both informational

[2] Teaser ads may be seen as the fourth type ad (e.g., an ad just shows "*Coming Soon, March 21*"). However, in other cases, a teaser ad may be categorized into either an informational (e.g., *"Real French Style is Coming"*) or transformational ad (e.g., *"Isn't it Beautiful?"*) depending on the strategic focus of the ad component.

and transformational appeal, this study focuses on the third ad type which is high in both informational and transformational content. This ad type is called a 'dual' advertisement in the present study

Information processing style

How do people differently receive and evaluate diverse types of advertising message? That is, what information processing mechanisms do consumers use to respond to advertising messages? There have been attempts to classify information processing modes. For instance, Chen and Chaiken (1999) distinguished between systematic and heuristic processing modes; and Petty and Cacioppo (1986) differentiated the central and peripheral route of information processing in terms of elaboration likelihood levels depending on consumers' ability and motivation. The different processing modes or routes emerge from different personal characteristics (Petty & Wegener, 1999). Some individuals might carefully consider the content of an advertising message and systematically evaluate the merits of the message; alternatively, others might evaluate a message more superficially rather than weighing the message systematically and more easily involve perceived expertise of the message source or the affective tone of the message. Different modes of processing show different procedures and are caused by different individual personalities. However, it is not always the case. Petty and Wegener (1998) suggested that "central and peripheral processes can (and often do) operate simultaneously" because the two routes are not mutually exclusive. The processes differently operate depending on the relative dominance of personal characteristics in a given context.

Likewise, in terms of affect and cognition, some scholars suggested that individuals do not rely solely on cognition or affect for all information processing. Reed and Ewing (2004)

proposed that affective and cognitive processing can occur simultaneously, involving optimal levels of both affective and cognitive processing. Researchers suggested that the affect and cognition in terms of information processing is independent as well as interactive relying on different individual's characteristics (Ruiz & Sicilia, 2004; Sojka & Giese, 1997; Zajonc, 1980; Zajonc & Markus, 1982). Zajonc and Markus (1982) suggested that individual attitudes may be influenced by a variety of combinations involving affective and cognitive components in persuasion. In some cases, the affective component may be dominant; in another case, the affective and cognitive factors may interact with each other; and in other cases, the cognitive factors may be dominant and primary. They recommended that "information processing is influenced by the interaction of affect and cognition" (Zajonc & Markus, 1982). Edwards (1990) also proposed that individuals are most likely to use a combination of affective and cognitive processing, and the two constructs (affect and cognition) may interact but remain separate.

As mentioned above, taking the suggestion which cognitive and affective processes may proceed independently as well as interdependently at the same time (Zajonc, 1980; Zajonc & Markus, 1982), Sojka and Giese (1997) proposed that the relationship between affect and cognition can be conceptualized as four types. Each type represented a different information processing style (thinking processors, feeling processors, combination processors, and passive processors). They examined the four styles by using both the *Need for Cognition* scale (NFC: Petty, Cacioppo & Kao, 1984) to measure cognitive processing and the *Preference for Affect* scale (PFA: Sojka & Giese, 1997) to assess affective processing. Based on the framework by Sojka and Giese (1997), Ruiz and Sicilia (2004) revealed that processing styles and ad appeals can be categorized by the interaction between affect and cognition (affective, cognitive, or both).

Product type

It has been investigated whether advertising effect differs from product type (Chaudhuri & Holbrook, 2002; Johar & Sirgy, 1991). Some scholars suggested that advertising is more effective when there is a *fit* between ad message and product (Till & Busler, 2000). Consumers' attitudes reflect different motives and independent components of product evaluation (Mano & Oliver, 1993). According to Johar and Sirgy (1991), the appropriate appeal should be selected by the proper consideration of the nature of a product. Further, Loef et al. (2001) proposed that advertising effectiveness can be determined by the match or mismatch between product type (utilitarian and hedonic) and advertising type (informational and transformational).

Attempts to classify product categories into two dimensions of *think* and *feel* (Claeys et al., 1995; Dubé et al., 1996; Ratchford, 1987; Vaughn, 1980) or *utilitarian* and *hedonic* (Batra & Ahtola, 1990; Chaudhuri & Holbrook, 2002; Hirschman & Holbrook, 1982; Johar & Sirgy, 1991; Loef et al., 2001; Mort & Rose, 2004; Shavitt, 1992) have been conducted with success. According to Batra and Ahtola (1990), "it has been suggested theoretically that consumer attitudes have distinct hedonic and utilitarian components" and that "product categories differ in the extent to which their overall attitudes are derived from these two components". The FCB grid distinguished between products on a think/feel dimension reflecting the type of information processing associated with the product (Vaughn, 1980). Supporting the notion of the FCB grid, Ratchford (1987) translated the *think* side of the grid into products bought for 'utilitarian needs', where the main focus lies on functional performance and which are cognitively processed and evaluated. The *feel* side was interpreted to represent products where the drive for purchase is ego gratification, social acceptance and sensory stimulation. The focus is on possibilities of self-enhancement and the product evaluation during choice is holistic and affective.

Some researchers have argued that the classification should be based on the brand, not on the product category because advertising mainly focuses on one brand whose positioning varies in one product category. Rossiter et al. (1991) proposed that the classification of think/feel does not allow the distinguishing of differences between product category and brand purchase motivations. They argued that the classification should be based on brands to explore the complexity of the consumer decision process. Although this remark might be reasonable, there have been substantial attempts to examine the differential effects of advertising messages depending on cognitive/affective product type (Loef et al. 2001). Mort and Rose (2004) suggested that "the hedonic/utilitarian quality…is a product-level attribute". Product can be characterized as primarily utilitarian or primarily hedonic (Dhar & Wertenbroch, 2000). Utilitarian/hedonic as a product-level dimension differs from involvement that is a combination of both a consumer's level of situational involvement and the durable personal relevance of the product to the individual (Celsi & Olson, 1988). Moreover, Loef et al. (2001) argued that "only if a brand is positioned on a benefit that is related to the main purchase motive associated with the product category, brand choice and product choice motives will be largely the same." Consequently, research concerning the differential effects by product type indicated that the product classification is reasonably acceptable in terms of its reflection of different motives and of independent components of product evaluation and that might provide useful implications in advertising research (Berger, 1986; Dubé et al., 1996; Johar & Sirgy, 1991).

Claeys et al. (1995) provided evidence of individuals' different processing mechanisms corresponding to think and feel products; individuals primarily emphasize rational and cognitive aspects for think product and primarily emphasize emotions and affect for feel products. They utilized the Means-End approach to distinguish between consumers' cognitive structures for

think and *feel* products, using 15 products in each of the two low involvement quadrants of the FCB grid (Berger, 1986). The laddering technique was used to discover consumers' means-end structure for the two different product categories. The results showed that think products are mainly viewed as leading to objective, tangible, functional consequences while feel products are associated with subjective, intangible, psychosocial consequences. Mort and Rose (2004) also suggested that the cognitive structures of the motivation to purchase differ across product types. That is, the motivation to buy a utilitarian product seeks the immediate consequences by the purchase and the key motivation to buy a hedonic product is a need to fulfill an individual's values through the purchase.

Further, the question of mutual exclusiveness of the two dimensions is also underlying the *think/feel* product classification. Like the classifications of message strategy and information processing style, the think/feel product classification is not solely relying on either think or feel. Researchers suggested that think and feel product characteristics can interact with each other. It has been recognized that one product may have both utilitarian and hedonic elements (Batra & Ahtola, 1990). Berger (1986) suggested that some products (e.g., a family car) can be placed in think and feel at the same time because consumers can have a lot of think and a lot of feel simultaneously; or other products can have little of either. Chaudhuri and Holbrook (2002) suggested that some product categories might be high or low on both functional and hedonic components as well. Accordingly, combination products (containing both think and feel characteristics) can be classified as a product type.

CHAPTER 3

HYPOTHESES AND RESEARCH QUESTIONS

From the literatures of the matching/mismatching effect and of the interaction between affect and cognition, this study proposes hypotheses based on the "matching" effect between message appeal and information processing style, between message appeal and product type, and among message appeal, processing style, and product type. Most prior research concerning affective and cognitive matching revealed a match is more effective than a mismatch (Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999; Ruiz & Sicilia, 2004; Shavitt, 1989).

Researchers supporting the mismatching effects argued that a match of message appeals to prior attitudes may generate counterarguments toward the brand advertised (Millar & Millar, 1990; Millar & Tesser, 1990). However, it has not been clearly demonstrated that a mismatching strategy exhibits greater effectiveness than a matching strategy between message types and the basis of attitude because a match generates an individual's motivation to counterargue the appeal. In addition, the psychological mechanism generating counterarguments was not investigated in the context of the affective/cognitive match. Dubé et al. (1995) suggested that advertisers seem to use a mismatch strategy between message appeal and product type. However, they did not explore the relationship between message appeals and product types in terms of a match or mismatch, but just examined what kind of message appeal was actually employed in food advertising. They just showed that the message strategies (mainly affective) of TV commercials for food products were not matched to individuals' attitudes (mainly cognitive) toward food.

Thus, they did not provide evidence that a mismatch was more effective than a match between ad appeals and product types.

Most of the previous research regarding the affect/cognition matching effect focused on the relative dominance of either affect or cognition. Therefore, for example, a match referred to an association of an affective message and affective attitude; a mismatch referred to an association of an affective message and cognitive attitude. Alternatively, this study proposes various associations considering the interaction between affect and cognition. Thus, some types of constructs (such as dual advertisements, combination processors, and combination products) do not lend themselves to be described by the term--*mismatch*--from the traditional viewpoint. For example, an association of a dual ad and a feel product is not exactly a mismatch; rather, it can be called a "non-match" for differentiating from the traditional concept about the match and mismatch.

From literature reviews of the matching effect between message types and information processing styles (Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999; Ruiz & Scilia, 2004), the framework of Sojka and Giese (1997) for information processing styles, and the framework of Puto and Wells (1984) for message strategies, this study offers the following research hypotheses. In this study, advertising effectiveness is measured by attitude toward the advertisement (Aad); attitude toward the brand (Ab); purchase intention (PI); reaction profile (RP; Wells, 1964); and unaided brand name recall (recall).

Hypothesis 1: For thinking processors, advertising effectiveness will be greater for informational advertisements than for dual or transformational ads.

Hypothesis 2: For combination processors, advertising effectiveness will be greater for dual advertisements than for informational or transformational ads.

Hypothesis 3: For feeling processors, advertising effectiveness will be greater for transformational advertisements than dual or informational ads.

Sojka and Giese (1997) suggested that "the type of processing used by passive processors is unclear". Because there is no clear insight into passive processors in terms of their affective/cognitive information processing, the attitudinal responses of passive processors could not be predicted. In this sense, this study does not propose a hypothesis for passive processors. Nonetheless, passive processors are examined by considering a research question about how passive processors respond to different kinds of advertising appeals.

RQ 1: What type of advertising appeal, if any, is most effective for passive processors? That is, how differently do passive processors respond to the three types of advertising appeals?

From the review of literatures, products can be largely classified into two dimensions of think and feel (Claeys et al., 1995; Dubé et al., 1996; Ratchford, 1987; Vaughn, 1980) or utilitarian and hedonic (Batra & Ahtola, 1990; Chaudhuri & Holbrook, 2002; Hirschman & Holbrook, 1982). Scholars suggested that the effects of message strategies are different depending on product types in terms of think/feel (or utilitarian/hedonic) (Loef et al., 2001; Mort & Rose, 2004). Research evidenced that a match between message appeals and product types in terms of affect and cognition is more effective than a mismatch (Johar & Sirgy, 1991; Shavitt, 1989). And, considering the interaction between affect and cognition, some researchers suggested that product types can be categorized high on both affect and cognition (Berger, 1986; Chaudhuri & Holbrook, 2002). Based on the literatures, this study offers the following research

hypotheses to examine the role of product type as a moderator of the relationship between advertising appeals and attitude in terms of the affective/cognitive match.

Hypothesis 4: For think products, advertising effectiveness will be greater for informational advertisements than for dual or transformational ads.

Hypothesis 5: For combination products, advertising effectiveness will be greater for dual advertisements than for informational or transformational ads.

Hypothesis 6: For feel products, advertising effectiveness will be greater for transformational advertisements than for informational or dual ads.

The effects of advertising message can differ from not only consumers' personal characteristics but also product characteristics. That is, an individual's tendency to engage in information processing may affect the manner in which the individual responds to advertising messages and the way in which the individual evaluates products (Dhar & Wertenbroch, 2000). Therefore, the manner and the way may differ from advertising appeals and product types in terms of affect/cognition (Mort & Rose, 2004). Ruiz and Sicilia (2004) revealed informational advertisements indicated greater advertising effectiveness for thinking processors than for feeling processors or combination processors. Further, the results raise the possibility of three-way matching effect among ad appeal, processing style, and product type. They reasoned that informational ads showed greater effectiveness for thinking processors than for feeling or combination processors because "camera is a product which decision making may be more cognitive than emotional." That is, informational ads of a cognitive product may be more effective for thinking processors than for other processors because the nature of all the three (the ad, the individual, and the product) was cognitive. Based on these literature reviews (Dhar & Wertenbroch, 2000; Mort & Rose, 2004; Ruiz & Sicilia, 2004), the following research

hypotheses are tested in the relationship among message strategy, information processing style, and product type.

Hypothesis 7: For think products, advertising effectiveness will be greater for informational advertisements matched to thinking processors than for any other combination of message appeal and information processing style.

Hypothesis 8: For combination products, advertising effectiveness will be greater for dual advertisements matched to combination processors than for any other combination of message appeal and information processing style.

Hypothesis 9: For feel products, advertising effectiveness will be greater for transformational advertisements matched to feeling processors than for any other combination of message appeal and information processing style.

Passive processors are also examined with the following research question regarding the relationship of passive processors to message appeal and product type.

RQ 2: What kind of match between message appeal and product type, if any, will be most effective for passive processors?

CHAPTER 4

RESEARCH METHOD

An experiment involving 347 undergraduate students was employed to address the research hypotheses and questions. In this chapter, exact details of the experiment method are presented, including the experimental design, pretests for the selection of product categories and creation of advertising stimuli for the research experiment, sample descriptions, questionnaire constructions and measures, data collection procedure, and methods of data analysis.

Experimental Design

The study employed a mixed 2 × 2 × 3 × 3 factorial design in which the first three factors are between-subjects predictors and the fourth factor is a within-subjects predictor. The four factors are, respectively: (1) affective information processing (high versus low), (2) cognitive information processing (high versus low), (3) advertising message appeals (informational, dual or transformational appeal), and (4) type of product category (think, combination and feel product).

Table 4-1. Experimental Design

Information Processing		Ad appeals	Products
Affect	Cognition		
2	2	3	3
High/low processing style	High/low processing style	Informational Dual Transformational	Think Combination Feel
Between subjects	Between subjects	Between subjects	Within subjects

Considering the interaction between affective and cognitive information processing, four types of individuals' processing styles were classified as combination processors (high in both levels), thinking processors (high cognitive, but low affective), feeling processors (high affective, but low cognitive), and passive processors (low in both levels). The present study intends to look at the matching effect between information processing styles and the types of advertising appeal across different product categories, using print advertisements.

For this study, first, three product categories representing think, combination and feel products were selected. Second, based on the product selection, nine advertisements (three different types of ads for each product) were created to address research hypotheses and questions. Two pre-tests were conducted to clarify each phase: whether the three product categories were appropriately selected to stand for each product characteristic (think, combination, and feel); and whether the advertisements properly transmit different types of appeal across the products.

Pretest 1: Selection of Products

A pre-test was conducted to determine which products to use in the research. Three product categories were selected through a pre-test (Pre-test 1) with thirty-one respondents. These products are: laser printer as a think product; mp3 player as a combination product; and swimsuit as a feel product.

For selecting the representative categories, an initial pool of eighteen product categories was drawn from the Choices 3 database (NCS Fall 2000), Simmons study of media and markets.[3]

[3] Choices 3 is an electronic resource for consumer demographics by product type and product name. It surveys over 30,000 households and is typically used in marketing research.

Based on previous purchase experience, high index score[4], high vertical percentage[5], gender neutral and target (undergraduate students), appropriate products were chosen as follows: *Designer Jeans, Jogging/Running shoes, Expensive watch, Audio component, Music CD, Disposable camera, DVD player, Camcorder, Video games, Cell phone, PC, Digital camera, Headache pain relievers, Auto insurance, MP3 player, Laser printer, Gym/workout clothes,* and *Swimsuit*. Some product categories from Choice 3 were adjusted by time and target specific consideration. VCR, still camera, and CD player were replaced with DVD player, digital camera, and MP3 player, respectively. Expensive watch was specified over $100, and PC was interpreted to include both desktop and laptop.

Respondents and measures

All thirty-one undergraduate students, majoring advertising and public relations at the University of Georgia (39% male, 61% female; ages 19-24), were asked to evaluate the characteristics of eighteen products by a given question, "when purchasing the product, the decision was/would be…" Eight evaluative semantic differential scales (two items for think; three for feel; and three for involvement) were used for the measure. The scales were taken from measures used to classify products on the FCB grid (Berger, 1986). A question for purchase experience was also asked. It allowed comparing the difference in the product classification depending on purchase experience (see Appendix A for the complete questionnaire).

Think was measured on two 7-point semantic differential scales. The endpoint descriptors for think were: decision is mainly logical or objective--decision is not logical or objective; and decision is based mainly on functional facts--decision is not based mainly on non-functional

[4] This number indicates the likelihood, compared to the total population, of meeting the specifications of both the column and the row. The base number for comparison is 100.

[5] The number of people who have a given characteristic, expressed as a percent, as defined by the column heading.

facts. These ratings were internally consistent across products (Cronbach's alpha =.968 for laser printer, .802 for mp3 player, and .699 for swimsuit,). Consequently, the items were averaged to form an index.

Feel was measured with three 7-point scales: decision is based on a lot of feeling--decision is based on little feeling; decision expresses my personality--decision does not express my personality; and decision is based on looks, taste, touch, smell, or sound--decision is not based on looks, taste, touch, smell, or sound. These ratings were internally consistent across products (Cronbach's alpha =.831 for laser printer, .747 for mp3 player, and .777 for swimsuit). Consequently, an index was produced by averaging the responses to the items.

A think/feel index was a relative scale produced by subtracting average score on think items from average score on feel items. Negative evaluation scores of the product were considered indicative of think. Each value referred to the relative contribution in one think/feel evaluation. If think dominated, the product would be on the left of the grid; and if feel dominated, the product would be on the right of the grid. If they were present in equal amounts resulting in a neutral score, the product would be in the middle. It allowed easy comparing the present result to the previous FCB classification using think/feel and involvement dimensions, because this index was taken from FCB grid research (Berger, 1986). Indeed, even considering a span of twenty-years, there was not a difference to the positions of some products such as auto insurance, 35 mm camera (digital camera), stereo component (audio component), headache remedy, expensive watch, and jeans (Figure 4-1).

Involvement was measured on a 7-point semantic differential scale consisting of three items: very important decision--very unimportant decision; a lot to lose if I choose the wrong brand--little to lose if I choose the wrong brand; and decision requires a lot of thought--decision

requires little thought. These ratings were internally consistent (Cronbach's alpha = .791 for laser printer, .700 for mp3 player, and .847 for swimsuit). Consequently, the items were averaged to form an index

Purchase experience was measured with a question that asked the respondent to answer whether they have purchased the given product.

Product classification on a think/feel dimension

As a result of the Pre-test 1, the product classification for eighteen product categories on think/feel and involvement dimensions is presented in Figure 4-1. The results appear in an x-y plot, which identify quadrants by scale midpoints. Laser printer, mp3 player, and swimsuit were selected after the pre-test. The three products are placed at similarly high levels on the involvement dimension. This study does not examine products within the low involvement condition and level of product involvement was not manipulated or analyzed as a blocking factor. Therefore, four low involvement products--disposable camera, gym cloth, video game, and music CD were excluded (Figure 4-1). This is because information may not be centrally processed in the low involvement dimension--considered habitual and impulsive quadrants in the FCB grid--making only peripheral processing likely to occur (Rossiter, Percy & Donovan, 1991).

From Figure 4-1, auto insurance was the most "think" product. However, it was excluded from the selection because many of the respondents (25 out of 31) have no experience buying auto insurance. Considering this low incidence of purchase experience, the responses were not based on respondents' own experience, even though auto insurance exhibited the highest value as a think product on both Figure 4-2 (for those who have a purchase experience) and Figure 4-3 (for those who have no purchase experience).

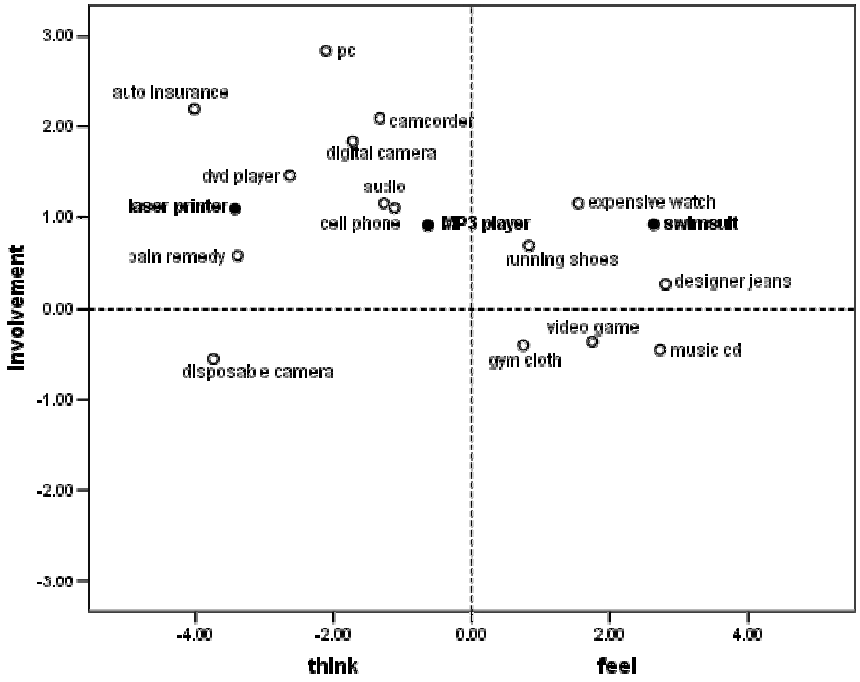

Figure 4-1. Product Classification on Think/Feel and Involvement Dimension

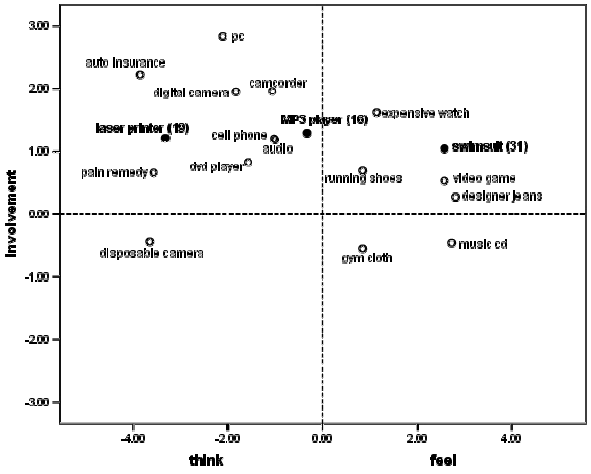

Figure 4-2. Product Classification on think/feel and Involvement Dimension (with purchase experience)

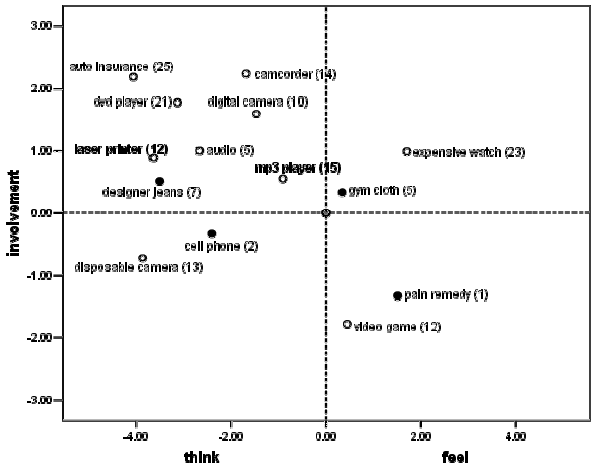

Figure 4-3. Product Classification on think/feel and involvement dimension (no purchase experience)[6]

[6] All 31 respondents have an experience to purchase following 4 products; running shoes, swimsuit, music CD, and PC. Thus, the 4 types of product are showing on the (0,0) point. (Figure 4-3)

In terms of the purchase experience, some products such as designer jeans, cell phone, and headache pain remedy were not included in the selection, because the positions of the products were differently placed on the classification map depending on respondents' buying experience (see Figure 4-2 and 4-3). Respondents who had bought designer jeans evaluated them as a feel product, while seven subjects who had not bought designer jeans thought them as a think product. Cell phone was thought of as a low-involvement think product for two subjects who had not purchased it. Interestingly, headache pain relievers were changed their position as a function of prior purchase from high-involvement think quadrant to low-involvement feel quadrant, even though the number cases of no prior purchase was too small for a reliable analysis (1 out of 31).

MP3 player was selected for representing a combination product, which has the same amount of characteristics in both think and feel. From Figure 4-1 and 4-2, mp3 player appears almost right between think and feel dimensions as well as exhibits a higher involvement level than running shoes. For another justification for the product selection, the evaluation scores were ranked by the degree of feeling. Thinking items were recoded to show feeling value (a seven-point scale: 1-mostly thinking/ 7-mostly feeling). After reverse scoring of thinking items, all five items (two think and three feel) were summed up. The result shows in Figure 4-4 (5.0 is the lowest, 20.0 is the middle, and 35.0 is the highest value). As presented in Figure 4-4, mp3 player appears almost right on the middle. Also, swimsuit appears as the most "feel" product and laser printer is presented as the most "think" product considering some accounts as mentioned before. Those are that disposable camera is on low-involvement level, auto insurance has a buying experience problem, and the position of headache pain relievers are not stable

depending on the purchase experience. Therefore, the selection of three products was also supported from Figure 4-4.

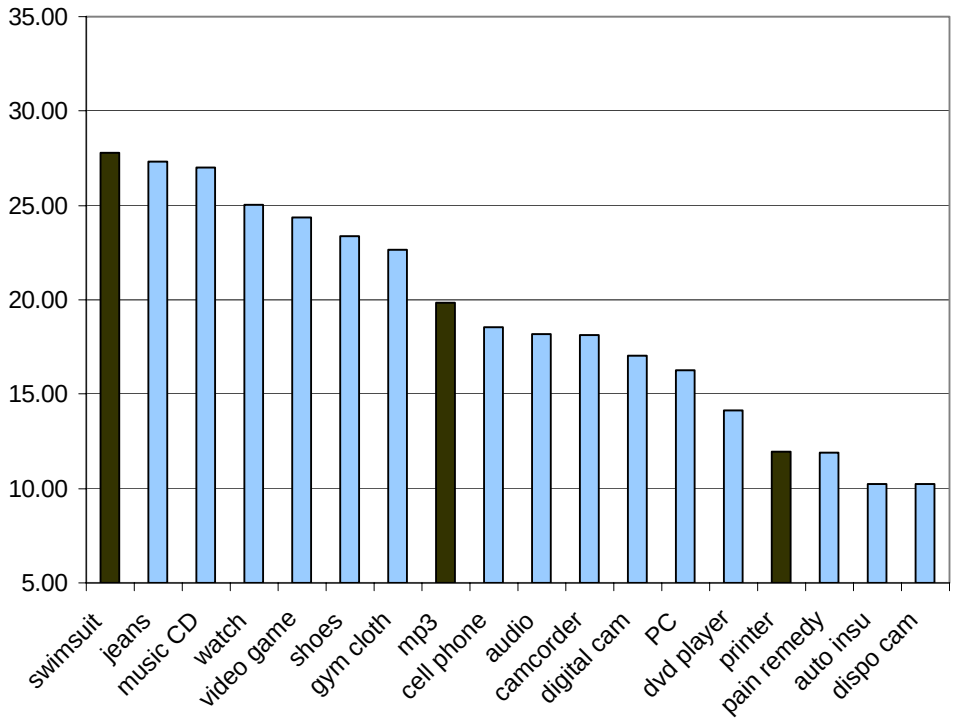

Figure 4-4. Product Classification on the Feeling dimension

Product classification on two dimensions of think and feel

While FCB separately developed the scales to measure think and feel, the two scales for think and feel were combined into one scale assuming think and feel are on a single continuum. Through this method, high think or high feel products might be clearly detected by showing a high-think automatically means a low-feel and vice versa. However, products positioned around the middle could be problematic, because the formula to obtain score on a single think/feel dimension looks only at the difference between the score on think and the score on feel. Therefore, the FCB score on one think/feel dimension does not reveal whether the products around the middle are high on both, moderate on both, or low on both think and feel. Thus,

when it is employed on two dimensions of think and feel, the product classification can get a better result.

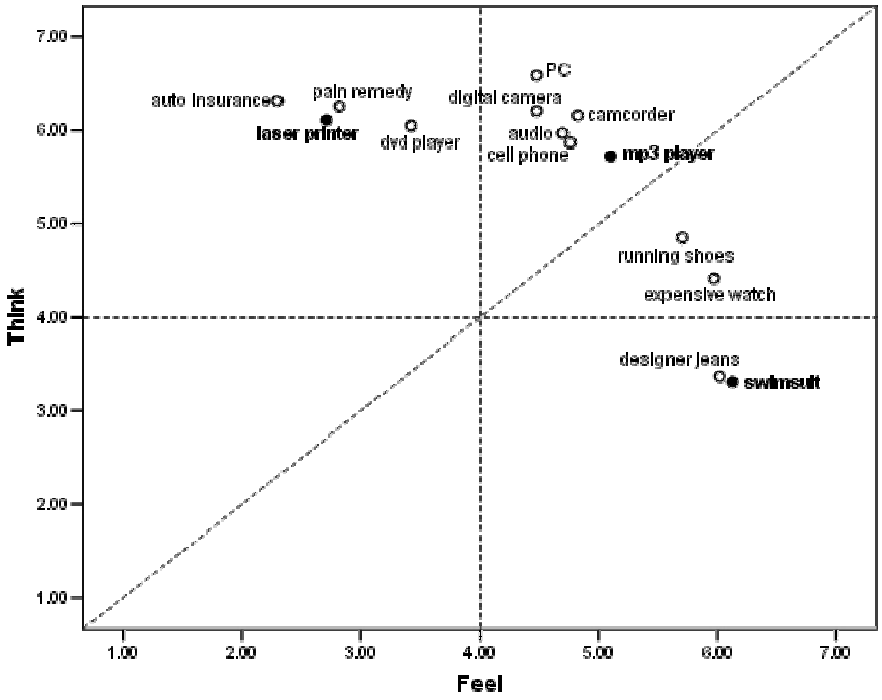

Figure 4-5. Product Classification on think/feel dimensions (high involvement only)

Figure 4-5 shows the result of product classification on two think/feel dimensions. The Figure was drawn with only 14 high-involvement products. The same products--laser printer, mp3 player, and swimsuit--were chosen as they presented in Figure 4-5. Laser printer had the highest think index score and lowest feel index score. Auto insurance and headache pain remedy were excluded due to little purchase experience and unstable positions depending on purchase experience, respectively. Swimsuit was the product that had the highest feel and lowest think index scores. MP3 player was the most obvious product presented in equal amounts of think and feel index scores. It was placed high on both think and feel (think 5.73; feel 5.00) on the classification map. Therefore, mp3 player was represented for high think-high feel product.

The thirty-one pretest subjects' rating on eight items were summed across the three products and subjected to a principal components analysis, resulting in clean factors explaining 81.1%, 73.9%, and 77.4% (laser printer, mp3 player, and swimsuit, respectively) of the total variance. Three factors--think, feel, and involvement--were very exclusively obtained by a PROMAX rotation for each product (Table 4-2). For laser printer, a PROMAX rotation generated high loadings on the first factor for three feel items(based on feeling, self-expression, and 5 senses); on the second factor for three involvement items(important, amount to lose, and thought required); and on the third factor for two think items(logical/objective and functional facts). For mp3 player, a PROMAX rotation produced high loadings on the first factor for two think items, on the second factor for three involvement items, and on the third factors for the three feel items. For swimsuit, a PROMAX rotation produced high loadings on the first factor for three involvement items, on the second factor for three feel items, and on the third factor for two think items.

The factor analyses indicates that think and feel were distinctively divided into two dimensions across all three products. This conclusion is also supported from internal consistency reliability tests. The 5-item scales (two think and three feel items) were not acceptable together for all products (Chronbach's alpha: .378 for laser printer; .554 for mp3 player; and .148 for swimsuit). However, when these scales were divided into 2 dimensions of think and feel separately, each think and feel category generated higher internal consistency, which are within the range of acceptable scale performance (all alpha scores >.70, see Table 4-3). The internal reliability of three involvement items was quite acceptable across all products as well (all alpha scores >.70, see Table 4-3).

Table 4-2. Factor Analysis of the Selected Products (n=31)

	Laser printer			MP3 player			Swimsuit		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Logical/objective	-.035	-.018	.963	.882	.178	-.163	.253	-.154	.698
Functional facts	.027	.003	.982	.935	-.021	-.199	-.153	.202	.981
Based on Feeling	.902	-.116	.114	-.133	.050	.703	-.045	.916	.321
Self-expression	.760	.182	-.190	-.357	.111	.892	.119	.764	-.111
5 senses	.905	-.051	.012	.528	-.220	.675	.008	.767	-.257
Important	.057	.643	.397	.192	.717	.276	.864	.143	-.209
Amount to lose	.124	.872	.082	-.192	.825	-.155	.802	-.009	.327
Thought required	-.178	.932	-.077	.263	.733	.081	.930	-.054	-.061
% of Variance	36.81	29.65	14.60	33.11	22.43	18.38	36.39	29.12	11.91
Cumulative %	81.06			73.93			77.43		

Based on the internal reliability tests, think and feel seemed to define separate dimensions. High reliability scores for the two subscales suggested that items could be dropped while maintaining reliability. However, it is difficult to decisively conclude that think and feel are on two separate dimensions, because the number of items to test internal reliability was relatively small. Moreover, think and feel were significantly correlated for swimsuit (r=-.478, p<.01), even though the others were not significantly correlated. And, think and feel had negative relationships for all types of product (Table 4-4). It could suggest that think and feel can be on one dimension. For analyzing this issue in detail, a larger sample and more measurement items will be needed.

Table 4-3. Reliability Statistics (Think, Feel, and Involvement)

	Number of items	Cronbach's Alpha based on standardized items		
		Laser printer	MP3 player	Swimsuit
Think	2	.968	.802	.701
Feel	3	.831	.747	.777
Involvement	3	.791	.714	.847

However, regardless of the number of dimensions for think and feel, the selection of three products was quite reasonable to represent each think, combination, and feel product. This is because the patterns of product classification were consistent across Figures 4-1, 4-4, and 4-5; and the selection was also reasonably acceptable when the level of involvement and purchase experience were considered.

Table 4-4. Pearson Correlation Matrix between Factors (Think, Feel, and Involvement)

	Laser printer			Mp3 player			Swimsuit		
	Think	Feel	INVL	Think	Feel	INVL	Think	Feel	INVL
Think		-.319	.215		-.212	.175		-.478**	.048
Feel			.130			.089			.169
Involvement (INVL)									

Correlation is significant at the level of ** $p<0.01$ (2-tailed)

Gender difference for the measure of the think/feel scores for each product selected in this study was analyzed using one-way ANOVA. This is because the proportion of subjects was somewhat skewed to female (39% male, 61% female). The mean and standard deviations for a think/feel index are shown in Table 4-5, and Table 4-6 shows the result of the analysis of variance. There is no significant main effect of gender on the think/feel index. Therefore, it can be concluded that the product selection was not influenced by any difference from gender.

Table 4-5. Means and standard deviations (Gender Difference)

	Sex			
	Male (n=15)		Female (n=27)	
	M	*SD*	*M*	*SD*
Laser printer	-2.97	1.77	-3.35	2.37
Mp3 player	-.63	1.60	-.47	1.49
Swimsuit	2.07	1.50	2.97	2.25

Table 4-6. One-way Between-subjects ANOVA for Gender Difference

Source	*SS*	*df*	*MS*	*F*	*Sig.*
Laser printer	1.341	1	1.341	.255	NS*
Mp3 player	3.857	1	3.857	1.526	NS
Swimsuit	3.405	1	3.405	.728	NS

* NS: Not Significant at $p<.05$

Pretest 2: Creation of Stimulus Materials

A pre-test (Pre-test 2) manipulation check was conducted with 78 respondents to determine whether nine advertisements created for this research appropriately transmit three types of message appeals (informational, dual, and transformational appeals) across laser printer, mp3 player, and swimsuit.

Advertising stimuli

Nine advertisements were created that differ in levels of information and emotions elicited. Each of the three product categories had three types of message strategies: informational, dual (both informational and transformational), and transformational appeal. In each product category, one advertisement was informational, another ad was transformational without any objective brand information about the brand, and the other ad was both informational and transformational at the same time. All the ads were made with positive claims and without any negative ones, which might be associated with negatively oriented motives such as problem removal, problem avoidance, incomplete satisfaction, mixed approach-avoidance, and normal depletion. For creating advertisements, fictitious brand names were used to avoid any influence by pre-existing attitudes toward real brands. There will be one brand name for each product type as following: *Pion* for laser printer, *Empas* for mp3 player and *Freener* for swimsuit.

Informational ads provided factual and relevant claims associated with specific attributes of the brand in a logical manner with product pictures. Transformational ads were mainly generated by use of full size favorable visuals that were appropriately related to each product characteristic and the headline in the ad. Dual ads should equally represent both informational and transformational components. In this study, dual ads were created as ones which are highly informational as well as highly transformational. For creating dual ads, the same visuals used in each transformational ad and a selection of the same factual claims from each informational ad were employed. However, it is not realistic to simply put the visuals and the texts together. This is because the simple mix may make the ad too complicated or may cause some distractions in the ads (e.g., each visual was a full-page size, thus there could be too many overlaps with rational claims on the visuals). Pieters and Wedel (2004) suggested that, the sizes of three elements--brand, text, and pictorial--are key variables that are manipulated jointly in advertising design, and changes in each of them may affect consumers' attention to and evaluation of the ad. In view of that, the size of the visuals and the number of rational claims were reduced to almost half, and then they were properly designed for the dual ads.

Everything except message strategy was constant across three ads within a product. They were created with the same type, size, and color of font, the same picture of the product, the same brand logo, and the same position of ad components. The same headline was used for three types of ads for each product: laser printer, "S*eamless communications*"; mp3 player, "*Let the sound take you over"*: swimsuit, "*Color at its believable, beautiful best*". Every headline referred to one specific physical attribute of each product-- high performance for laser printer; rich sound for mp3 player; and high quality of color for swimsuit. For high-production quality, special photo papers were used to print out the ads.

Procedure

The respondents were given a booklet with three different ads across three product types, each followed by a questionnaire (see Appendix B for the complete questionnaire). The booklet consisted of three sets of an ad and following questionnaire. The immediate effects of the ads were measured. After a brief instruction by the moderator, the respondents were asked to look at the first ad for 20 seconds, and then to complete a questionnaire regarding the ad. They repeated this viewing and answering three times for the three ads. The questionnaire started with a written instruction to not turn back to the ad. These measures were taken to make the exposure of the ad realistic, where consumers view advertising for a short time without a specific purpose (Lee, 2000). The combinations between message and product and sequences of three ads given to respondents were systematically rotated to avoid any order effect (e.g., in case of set I, "MD→PI→ST", "ST→MD→PI", and "PI→ST→MD", see Table 4-7).

Table 4-7. Treatments and message order combinations

Set	1st ad	2nd ad	3rd ad	Combination
I	MP3 player Dual ad (MD)	Laser Printer Informational ad (PI)	Swimsuit Transformational ad (ST)	MD→PI→ST ST→MD→PI PI→ST→MD
II	MP3 player Informational ad (MI)	Laser Printer Transformational ad (PT)	Swimsuit Dual ad (SD)	MI→PT→SD SD→MI→PT PT→SD→MI
III	MP3 player Transformational ad (MT)	Laser Printer Dual ad (PD)	Swimsuit Informational ad (SI)	MT→PD→SI SI→MT→PD PD→SI→MT

Respondents and Measures

A convenience sample of 78 undergraduate students, who were in the departments of advertising, public relations or telecommunication at the University of Georgia, participated in a

pretest (Pretest 2) for manipulation check of the stimulus materials. This pretest consisted of two phases: the first phase was employed with 42 respondents (36% male, 64% female; ages 19-24) and the second phase was employed with 36 respondents (47% male, 53% female; ages 19-24).

For measuring informational/transformational characteristics of ads, a 7-point semantic differential scale consisting of ten items was used. Nine items out of ten adopted from Hirschman (1986) were used to measure informational and transformational characteristics separately. And, one global item to measure both informational and transformational at the same time was used (see Appendix B for complete questionnaire).

Informational Characteristic (IC) of the ad was measured on five 7-point semantic differential scales taken from Hirschman (1986). The endpoint descriptors are: logical/not logical; educational/not educational; informative/not informative; factual/not factual; and useful/not useful. An index was produced by averaging the responses to the items.

Transformational Characteristic (TC) of the ad was measured with four 7-point semantic differential scales adopted from Hirschman (1986): attractive/not attractive; desirable/not desirable; arousing/not arousing; and beautiful/not beautiful. The items were averaged to form an index.

Global Evaluation of Ad (GEA) was a relative scale produced by averaging all five informational and four transformational items (the scores of informational items were recoded in an opposite direction). Lower evaluation scores of the ad were considered indicative of a more informational characteristic, alternatively higher evaluations of the ad indicated a more transformational characteristic (the lowest score is 1, 4 is the middle, and the highest score is 7).

Single Evaluation of Ad (SEA) was measured with a 7-point semantic differential scale of one item. The endpoint descriptor was mostly informational--mostly emotional. *Brand*

familiarity was also measured to check "unknown" with a 7-point semantic differential scale of an item: the brand is familiar to me--the brand is unfamiliar to me.

The first phase

Respondents rated each ad in terms of informational and transformational characteristics. The ratings were internally consistent across advertisements (all alpha scores > .84) (Table 4-8). Consequently, the ratings were averaged across advertisements and submitted to an analysis of variance.

Within each product type, three ads were analyzed using one-way ANOVA to determine whether they properly identified different types of appeals. As a result of the analysis, it was indicated that one advertisement--dual ad of mp3 player--was not appropriately transmitted. Two one-way analyses of variance were conducted with dependent variables of GEA and SEA separately. From both analyses, the dual ad of mp3 player was more informational rather than being both informational and transformational (Table 4-9). Thus, there was no significant difference between informational and dual ads of mp3 player (p>.01) in both analyses for GEA and SEA, using Tukey HSD test (Keppel, 1991)[7] for post hoc analysis.

Table 4-8. Reliability Statistics (Phase I)

	5 items for IC	4 items for TC	Total 9 items
Laser printer	.916	.938	.878
Mp3 player	.903	.878	.875
Swimsuit	.857	.905	.847

[7] If the total set of comparisons is considered, Tukey test is recommended (pp. 173-175). If the comparisons consist of differences between a control condition and several experimental conditions, the Dunnet test (pp. 175-177) is appropriate. If all types of comparisons, both pairwise and complex are considered, the Scheffe is the right method (pp. 172-173).

In this stage, the headline copy of mp3 player ads was "*I'm listening"*. For mp3 transformational ad, although it had only the headline and a picture of a woman listening to music wearing earphones without any rational claim, many respondents gave high scores for the items of logical, factual, and useful that were intended to measure informational characteristics. Indeed, from Table 4-9, the transformational ad of mp3 player was least transformational compared to other products' transformational ads. It might generate a similar result for the evaluation of dual ad, because the headline could evoke a more informational reaction.

Table 4-9. Means for the Evaluation of Advertisements (Phase I)

	Global Evaluation of Ad (GEA)			Single Evaluation of Ad (SEA)		
	Info	Dual	Trans	Info	Dual	Trans
Laser printer	2.21***	3.94***	5.13***	1.64***	4.00**	5.93***
Mp3 player	2.29	2.89	4.59***	2.00	2.64	5.43*
Swimsuit	2.44***	3.60***	5.01***	2.29**	3.71*	5.64***

- The mean difference is significant at the levels of * $p<.05$ and *** $p<.001$
- 1 is most informational and 7 is most transformational; therefore, 4 is right in the middle indicating optimal score of dual ad.

Therefore, the headline copy was replaced with "*Let the sound take you over*", which might evoke a more transformational reaction. In addition, in a dual ad of mp3 player, the size of picture was enlarged and the amount of rational claims was reduced. Consequently, all three mp3 ads were revised. All 9 advertisements, including three new mp3 ads and the existing 6 ads for laser printer and swimsuit, were retested in the second phase with another group of respondents.

The second phase

Thirty-six respondents rated each ad in terms of informational and transformational characteristics. The ratings were internally consistent across advertisements (all alpha scores of items for IC and TC > .83) (Table 4-10). The Cronbach's alpha scores for all 9 items were relatively lower than others. However, the generally agreed upon lower limit for Cronbach's alpha is .70 (Hair et al., 1998); therefore, the scores (all alpha scores > .70) were quite acceptable to sum up for making an index. Consequently, the ratings were averaged across advertisements and submitted to ANOVA.

Table 4-10. Reliability Statistics (Phase 2)

	5 items for Informational Characteristics (IC)	4 items for Transformational Characteristics (TC)	Total 9 items
Laser printer	.918	.930	.723
Mp3 player	.858	.834	.785
Swimsuit	.922	.917	.759

Table 4-11. Means for the Evaluation of Advertisements (Phase 2)

	Global Evaluation of Ad (GEA)			Single Evaluation of Ad (SEA)		
	Informational	Dual	Transformational	Informational	Dual	Transformational
Laser printer	2.17***	4.04***	5.07***	1.67*	4.08*	5.75*
Mp3 player	2.94*	3.70*	4.85*	1.67*	3.73*	5.92*
Swimsuit	2.63*	3.69*	4.91*	1.50**	3.86**	4.83**

- The mean difference is significant at the levels of * $p<.05$, ** $p<.01$, and *** $p<.001$.
- 1 is most informational and 7 is most transformational; therefore, 4 is right in the middle indicating optimal score of dual ad.

Within each product type, three ads were analyzed using an ANOVA to determine whether they properly identified different types of appeals. As a result, it was indicated that all 9 ads were appropriately transmitted. Two one-way analyses of variance (using Tukey HSD test for post-hoc analysis) were conducted with dependent variables of GEA and SEA separately. From both analyses, three types of ad appeals were different from one another within each product category (Table 4-11): laser printer, $F(2, 33)=30.581$, $p<.001$; mp3 player, $F(2, 33)=36.473$, $p<.001$; and swimsuit, $F(2, 33)=38.308$, $p<.001$).

Table 4-12. Factor analysis of the Advertisements (n=36)

	Laser Printer		MP3 Player		Swimsuit	
	Factor1	Factor2	Factor1	Factor2	Factor1	Factor2
Logical	.857	.196	.548	-.331	.735	-.035
Educational	.890	-.059	.848	-.403	.844	-.214
Informative	.891	-.171	.918	-.237	.946	-.056
Factual	.793	-.217	.878	-.098	.913	-.040
Useful	.898	.207	.751	.448	.910	.246
Attractive	-.041	.913	-.095	.723	.069	.962
Desirable	.277	.962	.283	.814	.189	.928
Arousing	-.223	.818	-.180	.819	-.068	.837
Beautiful	-.014	.950	-.218	.900	-.228	.852
% of variance	95.78	4.22	91.74	8.36	95.89	4.11
Correlation*	-.190		-.130		-.119	

- None of the Pearson Correlation is significant at $p<.05$ (2-tailed).

To compare the mean differences between ad appeals, a global index (GEA) and a single measure (SEA) as dependent variables were used in this study. Although the index had an acceptable reliability score, Table 4-10 shows that the nine items seem to be multidimensional constructs on both informational and transformational dimensions rather than unidimensional constructs. Therefore, factor analyses were performed to take this into account. As appeared in

Table 4-12, five items (logical, educational, informative, factual, and useful) for informational characteristic were put into one factor and four items (attractive, desirable, arousing, and beautiful) for transformational characteristic were put into the other factor. Also, two factors in each product category exhibited negative but small correlations; none is statistically significant.

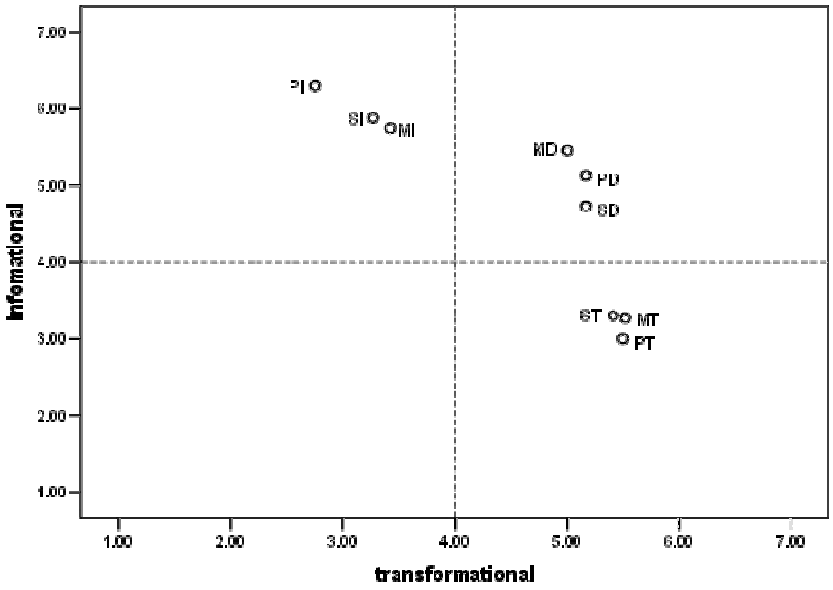

Figure 4-6. Classification of Ad types on Informational and Transformational Dimensions

The classification of ad appeals on both informational and transformational dimensions is presented in Figure 4-6. Each type of ad appeal was distinctively placed on the dimensions for all product categories. Informational ads were placed on high informational but low transformational dimension; transformational ads were placed on high transformational but low informational dimension; and dual ads were placed high on both dimensions. All three informational ads scored about 6 on the informational dimension and about 3 on the transformational dimension; dual ads scored between 5 and 6 on both dimensions; and transformational ads scored between 5 and 6 on the transformational dimension and about 3 on

the informational dimension (Figure 4-6). Consequently, it can be concluded that three types of appeals--informational, dual, and transformational--in each product category were distinctively transmitted in the main study.

Main Experiment

Participants

Participants were undergraduate students enrolled in lower-level advertising, public relations, and journalism courses (*Advertising Principles; Advertising & Public Relations Research; Public Relations; and Intro Print Media*) at the University of Georgia. Many researchers insist there is a big difference between college students and "real" people (Sears, 1986; Wells, 1993). Therefore, student samples are not appropriate for research in social sciences because "the background and experiences of the subjects would have an impact, thus undergraduate students would be very different from adults" (James & Sonner, 2001). On the other hand, some scholars suggest that students are reasonably acceptable subjects, specifically, in studies designed to examine attitudinal responses because the basic processes would be the same for a more general population (Burnett & Dunne, 1986). In this sense, it is quite acceptable to use student samples for the present study because this study intends to examine individual's attitudinal responses. Also, the three products used in this study were selected from a pool of eighteen target-suited products, which enhances the appropriateness of a student sample. In addition, unknown brand names were used to avoid any influence from the background and experiences of the subjects.

A total of 378 participants took part in this study. However, the data from 31 participants were excluded due to incomplete and/or incoherent information. Therefore, results were based on the remaining 347 participants. Both male and female participants were included in this

research. Racial or ethnic background was not a factor in the selection process; therefore, various groups were included in the study. Informed consent was obtained from all participants prior to experiment. Each received research credit toward a course requirement in exchange for his or her participation.

Materials

Questionnaire: Two scales--Need for Cognition (NFC) and Preference for Affect (PFA)--were administrated to assess the participant's individual tendencies to process information. The Need for Cognition measure is useful in assessing the tendency of individuals to engage in and to enjoy thinking (Cacioppo & Petty, 1982). It is also useful in understanding how some variables presented in advertisements may influence consumer attitudes. The measure originally consisted of 34 items. In this study, instead, the 18-items NFC scale developed by Petty, Caccioppo, and Kao (1984) was employed (see Appendix C). The scale items were measured by 9-points Likert type scales (from –4 to +4). Nine of the 18 items varied in direction to inhibit response bias, and were reverse-scored. Item scores were summed for an overall measure. Higher NFC scores indicate a greater tendency to engage in and enjoy thinking. The Preference for Affect measure was utilized to identify an individual's level of affective processing. The measure consists of 13 items and was developed by Sojka and Giese (1997) (see Appendix C). The scales were measured by 9-points scales each scored – 4 to + 4. Item scores were summed for an overall measure. Participants were also asked to complete several demographic questions; gender, age, and major.

Product & Advertising Stimuli: Three product categories (Laser Printer for a think product, MP3 player for a combination product, and Swimsuit for a feel product) were selected

from Pretest 1. Three advertisements (informational, dual, and transformational ad) for each product were created for the main experiment. In Pretest 2, a manipulation check showed that the nine ads appropriately transmitted three types of message appeals for each of the three product types.

Dependent Measures: After viewing each advertisement, participant completed an attitude questionnaire used to measure advertising effectiveness. The questionnaire assessed the participants' attitude toward each advertisement, attitude toward each brand, the likelihood of purchasing each product, individual reaction toward each advertisement and brand name recall (see Appendix C for the complete questionnaire).

Seven-point semantic differential scales were used for items to assess consumers' attitudes and purchase intention. Several items to evaluate attitude toward the ad, attitude toward the brand, and purchase intention were selected from some relevant literatures. Three semantic differential scales--good/bad; favorable/unfavorable; and pleasant/unpleasant--were used to measure attitude toward the advertisement (Aad) (Lafferty & Goldsmith, 1999; MacKenzie & Luzt, 1989). For attitude toward the brand (Ab), three semantic differential scales--good/bad; satisfactory/unsatisfactory; and favorable/unfavorable--were used (Bruner & Hensel, 1996; Pham, 1996). And, three scales--unlikely/likely; improbable/probable; and impossible/possible--were used to measure purchase intention (PI) (Yi, 1990; Zhang & Buda, 1999) (see Appendix C). An index for each attitude and intention was produced by averaging the responses to the items. These dependent variables were measured immediately following exposure to the message. Researchers have found that immediate response to the advertisement itself is an important mediator between ad exposure and attitude formation toward the advertised product (MacKenzie, Lutz, & Belch, 1986).

Further, for diagnostic purposes, response to the advertisements was measured by Wells' reaction profile (1964) to examine underlying cognitive or emotional processes in the consumer's mind; how the global constructs--Aad, Ab, or PI--are formed and which items are most predictable of consumers' responses. The profile was collected immediately after subjects' exposure to each ad. The 25-scale items are utilizable to identify the dimensions that underlie consumers' cognitive and affective reactions to advertisements (Zinkhan & Burton, 1989). Unlike other popular reaction profiles such as Leavitt's multidimensional profile (1970) or Schlinger's viewer response profile (1979), which were initially designed for television commercials, Wells' profile was developed for advertising across media, not specially for television commercial. Thus, the Wells' profile measure may be more appropriate for this study using print advertisements. Ten of the twenty-five items varied in direction to inhibit response bias, and were reverse-scored. Item scores were averaged for an overall measure.

Brand name recall was also measured for each advertisement. Immediately after exposure to each advertisement, participants were asked to recall the brand name advertised, with the following question; "What is the name of the advertised brand you just saw?" Participants were not allowed to turn back the page to the advertisement regarding the recall question. The recall measure was unaided.

Procedure

The participants were given a booklet for the experiment. The booklet contained two sections; the first section consisted of 18 Need for Cognition items and 13 Preference for Affect items, and the second section consisted of three sets of ads and each followed by a questionnaire. In the first phase of the experiment, after a brief instruction about the research, participants

completed the NFC and PFA scales. After that, participants were instructed to view an ad for a specific length of time (20 second) and then to rate the ad along several dimensions which would assess their attitude toward the ad, attitude toward the brand, purchase intention, reaction profiles, and brand name recall. They repeated this viewing and answering three times corresponding to three ad stimuli. The exposure time was controlled. All participants in the same session started and finished to look at each ad at the same time. The questionnaire was started with a written instruction not to turn back to the ad. The immediate effects of the ads were measured.

Table 4-13. Treatments and message order combinations

Set	1st ad	2nd ad	3rd ad	Combination
I	MP3 player Dual ad (MD)	Laser Printer Informational ad (PI)	Swimsuit Transformational ad (ST)	MD→PI→ST ST→MD→PI PI→ST→MD
II	MP3 player Informational ad (MI)	Laser Printer Transformational ad (PT)	Swimsuit Dual ad (SD)	MI→PT→SD SD→MI→PT PT→SD→MI
III	MP3 player Transformational ad (MT)	Laser Printer Dual ad (PD)	Swimsuit Informational ad (SI)	MT→PD→SI SI→MT→PD PD→SI→MT

Every participant was exposed to three different types of advertisements across different product types (a set of I, II, or III; see Table 4-13). The combinations and sequences between message and product given to respondents were systematically rotated to avoid any order effect (e.g., in case of set I, "MD→PI→ST", "ST→MD→PI", and "PI→ST→MD", see Table 4-13). A total of forty sessions was employed for this study, which was carried out over an eight-day period. The experimental conditions and procedures of every session were constant. Although the number of participants in each session ranged from three to thirty-two, the stimulus materials

(nine cells in Table 4-13) were systematically assigned within each experimental session and across sessions.

Analysis

For the background measures, all the multiple items of two scales--Need for Cognition (NFC) and Preference for Affect (PFA)--were averaged for each. Then subjects were divided into two sub-groups using median splits on both their NFC and PFA scores. The mean differences for each variable (NFC and PFA) were statistically examined for the four different groups, demonstrating that their information processing style is mainly cognitive, mainly affective, high on both, or low on both affect and cognition. For dependent measures, subjects' mean ratings on the multiple item scores for each dependent index were employed--attitude toward the advertisement (Aad), attitude toward the brand (Ab), purchase intention (PI), and reaction profile (RP) scores. Each compared across advertisements in order to test the research hypotheses.

CHAPTER 5

RESULTS

Profile of Participants

The experiment was conducted during September, 2005 at the University of Georgia. Among the 347 participants, a majority were female (64.8%) and most were between 19 and 21 years old (89.6%) (Table 5-1). Approximately 66 percent of the participants were undergraduate students in Journalism and Mass Communication (Table 5-2).

Table 5-1. Participant Profiles: Sex and Age

	Age							Total
	18	19	20	21	22	23	24	
Male	-	27	54	29	9	2	1	122 35.2%
Female	8	65	96	40	9	3	4	225 64.8%
Total	8 2.3%	92 26.5%	150 43.2%	69 19.9%	18 5.2%	5 1.4%	5 1.4%	347 100.0%

Table 5-2. Participant Profiles: College/School Affiliations

School & Colleges	Art & Sciences	Business	Family & Consumer Science	Journalism & Mass Communication	Public & International Affairs	Others[I]	Total[II]
N	77	20	21	265	12	7	402
%	19.2	5.0	5.2	65.9	3.0	1.7	100.0

[I] Other Colleges and Schools include Agricultural & Environmental Sciences, Environment & Design, Education, and Social Work.

[II] Categories are not mutually exclusive because double-majors and pre-majors who identify with more than one department are included. Therefore, the total is greater than the number of participants.

Information Processing Styles

Individuals' information processing style was measured by using two scales--Need for Cognition (NFC; Petty, Cacioppo, & Kao, 1984) and Preference for Affect (PFA; Sojka & Giese, 1997). The NFC scale consisted of 18-items and the PFA scale consisted of 13-items (see Appendix C). For analysis, the items were averaged to form NFC and PFA indices. Each scale was internally consistent. Cronbach's alpha scores for both individual characteristics scales were high (NFC= .881; PFA= .897). There was no significant correlation between the two scales (Pearson $r = -.087$, $p=.108$).

		Need for Cognition: High	Need for Cognition: Low
Preference for Affect	High	***Combination Processors*** NFC Mean (1.50) PFA Mean (2.22) N = 89	***Feeling Processors*** NFC Mean (–.17) PFA Mean (2.38) N = 87
	Low	***Thinking Processors*** NFC Mean (1.48) PFA Mean (.35) N = 92	***Passive Processors*** NFC Mean (–.11) PFA Mean (.48) N = 79

Figure 5-1. Classification of the Individuals depending on their Processing Styles
Souce: Sojka, J. Z., & Giese, J. L. (1997). Thinking and/or Feeling: An Examination of Interaction between Processing Styles. *Advances in Consumer Research*, 24, 438-442.

Using a median split of the data (Medians; NFC= .77, PFA= 1.46), subjects were divided into two for each scale, and then classified into one of the four groups: high on both affect and cognition, high affect but low cognition, low affect but high cognition, and low on both. Figure 5-1 indicates the mean scores of each group--in the 9-point scales ranging from –4 to +4: combination processors (NFC= 1.50, PFA= 2.22); thinking processors (NFC= 1.48, PFA= .35); feeling processors (NFC= –.17, PFA= 2.38); passive processors (NFC= –.11, PFA= .48). ANOVA results indicate that mean differences for each variable (NFC and PFA) are statistically

significant for the four different groups (NFC: $F(3,343)=167.911$, $p<.001$; PFA: $F(3,343)=206.450$, $p<.001$) (Table 5-3).

Table 5-3. One-way Between-subjects ANOVAs for the Classification of Information Processing Styles by NFC and PFA

	Combination processors		Thinking processors		Feeling processors		Passive processors		*F*
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	
NFC	-.106	.840	-.179	.750	1.485	.572	1.506	.537	167.911 ***
PFA	.483	.744	2.389	.668	.354	.788	2.227	.629	206.450 ***

- The mean difference is significant at the levels of *** $p<.001$

Table 5-4. Post Hoc Tukey HSD Test for Pairwise Comparisons (Information Processing Styles)

	Type of ad (I)	Type of ad (J)	Mean Difference (I-J)
NFC	Thinking processors	Passive processors	1.591 ***
		Feeling processors	1.664 ***
		Combination processors	-.021
	Combination processors	Passive processors	1.613 ***
		Feeling processors	1.686 ***
		Thinking processors	.021
PFA	Feeling processors	Passive processors	1.906 ***
		Thinking processors	2.034 ***
		Combination processors	.161
	Combination processors	Passive processors	1.744 ***
		Feeling processors	-.161
		Thinking processors	1.872 ***

- The mean difference is significant at the levels of *** $p<.001$

Tukey HSD tests ($p<.05$) suggest (Table 5-4) that subjects can be meaningfully classified as high on cognition but low on affect (thinking processors); low on cognition but high on affect (feeling processors), and high (combination processors) and low (passive processors) on both affect and cognition scales. In the NFC measure, both thinking and combination processors were significantly higher than both passive and feeling processors. In the PFA measure, both feeling and combination processors were significantly higher than thinking and passive processors.

Dependent Measures

For the dependent measures, all multiple-item measures (Attitude toward the Ad, Attitude toward the Brand, Purchase Intention, and Reaction Profile) were averaged and employed as advertising effectiveness criteria in subsequent analyses. Cronbach's alpha tests were performed to examine the reliability of the items in each of the measures. All alpha scores for the items across product types and advertising appeals demonstrated high levels of internal consistency (all alpha scores>.850). A fifth effectiveness criterion, unaided Brand Recall, was also employed. The following section reports the results for each hypothesis and research question.

Advertising Appeals and Information Processing Styles

Hypothesis 1, 2, 3 and Research Question 1 examined the relationship between information processing styles and advertising appeals; whether a match between information processing styles and ad appeals is more effective than a mismatch. The data were analyzed by one-way within-subjects ANOVAs for each processing style.

H 1*: For thinking processors, advertising effectiveness will be greater for informational advertisements than for dual or transformational advertisements.*

One-way within-subjects ANOVAs were conducted to examine thinking processors' attitudinal responses toward different types of advertisements. Among five dependent measures, two observed *F* values were statistically significant: Purchase Intention, $F(2,182)=8.148$, $p<.001$; Reaction Profile, $F(2,182)=11.915$, $p<.001$ (Table 5-5).

Bonferroni[8] pairwise comparison tests ($p<.05$) indicate that informational ads (M=4.08, SD=1.66) evidenced greater PI than dual ads (M=3.51, SD=1.15) and transformational ads (M=3.17, SD=1.68) (Table 5-6). The tests ($p<.05$) also indicate that dual ads (M=4.89, SD=1.04) evidenced greater RP (reaction profile) than informational ads (M=4.33, SD=1.25), and transformational ads (M=5.17, SD=1.23) showed greater RP scores than informational ads.

Table 5-5. One-Way Within-Subjects ANOVAs for the Evaluation of Advertisements by Thinking Processors (N=90)

	Type of Advertisement						*F*	*Partial* η^2
	Informational ad		Dual ad		Transformational ad			
	M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	4.26	1.34	4.64	1.21	4.72	1.35	2.902	.032
Ab	4.43	1.21	4.45	1.08	4.58	1.34	.441	.005
PI	4.08	1.66	3.51	1.15	3.17	1.68	8.148 ***	.082
RP	4.33	1.25	4.89	1.04	5.17	1.23	11.915 ***	.116
Recall[9]	.66	.48	.74	.44	.70	.46	.625	.007

- The mean difference is significant at the levels of *** $p<.001$

Based on the ANOVA findings, **H1** was supported in terms of purchase intention. For thinking processors, informational ads generated greater purchase intention toward the advertised products than dual or transformational ads did. However, in terms of RP, the post hoc Bonferroni test showed conflicting results to the prediction made, although the results were

[8] For a one-way within-subjects ANOVA, SPSS (ver. 13.0) provides the following three post hoc analysis methods for comparing main effects: LSD (Least Significant Difference), Bonferroni, and Sidak test. According to Meyers et al. (2006), scholars caution against the use of LSD test because it is most liberal (i.e., it has a greater likelihood of committing a Type I error). Both Bonferroni and Sidak are considered moderately conservative approaches, which control the overall error rate by adjusting the operational alpha level. Of the two, Keppel (1991) suggested that the Bonferroni test is recommended by many commentators. Thus, this study uses the Bonferroni test for comparisons in within-subjects analyses.

[9] Recall was initially measured by an open-ended question. The data were coded into the following five categories: *correct, almost correct, product type* or *ad copy, incorrect*, and *don't know*. That is, recall was coded by a nominal scale. The *almost correct* referred to the recalled brand name which had one or two spelling errors (e.g., 'Enpas' instead of 'Empas' or 'Freeners' instead of 'Freener'). For ANOVA analysis, those categories were dummy coded (0—incorrect, 1—correct). Among five categories, *correct* and *almost correct* were recoded as "correct", and the others were recoded as "incorrect".

statistically significant ($p<.05$). That is, for thinking processors, informational ads produced lower RP than dual or transformational ads did.

Table 5-6. Post Hoc Bonferroni Test for Pairwise Comparisons (Thinking Processors)

	Type of ad (I)	Type of ad (J)	Mean Difference (I-J)
PI	Informational	Dual	.572 *
		Transformational	.913 ***
	Dual	Informational	-.572 *
		Transformational	.341
RP	Informational	Dual	-.562 **
		Transformational	-.840 ***
	Dual	Informational	.562 **
		Transformational	-.277

- The mean difference is significant at the levels of * $p<.05$, ** $p<.01$, and *** $p<.001$

H 2*: For combination processors, advertising effectiveness will be greater for dual advertisements than for informational or transformational advertisements.*

One-way within-subjects ANOVAs were conducted to examine combination processors' attitudinal responses toward different types of advertisements. Among five dependent measures, three observed F values were statistically significant: Attitude toward the Ad, $F(2,176)=11.176$, $p<.001$; Attitude toward the Brand, $F(2,176)=6.196$, $p<.01$; Reaction Profile, $F(2,176)=26.540$, $p<.001$ (Table 5-7).

Bonferroni pairwise comparison tests ($p<.05$) show that dual ads ($M=5.33$, $SD=1.47$) produced greater Aad than informational ads ($M=4.46$, $SD=1.43$), and transformational ads ($M=5.26$, $SD=1.45$) showed greater Aad than informational ads (Table 5-8). The tests ($p<.05$) indicate that dual ads ($M=5.14$, $SD=1.37$) resulted in greater Ab than informational ads ($M=4.53$, $SD=1.42$), and transformational ads ($M=4.98$, $SD=1.26$) showed greater Ab than informational ads. In terms of RP, dual ads ($M=5.23$, $SD=1.17$) produced greater RP scores than informational

ads (*M*=4.33, *SD*=1.43), and transformational ads (*M*=5.70, *SD*=1.31) showed greater RP than informational ads and duals ads.

Table 5-7. One-Way Within-Subjects ANOVAs for the Evaluation of Advertisements by Combination Processors (N=89)

	Type of Advertisement						*F*	*Partial* η^2
	Informational ad		Dual ad		Transformational ad			
	M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	4.46	1.43	5.33	1.47	5.26	1.45	11.176 ***	.113
Ab	4.53	1.42	5.14	1.37	4.98	1.26	6.198 **	.066
PI	3.66	1.77	3.86	1.83	4.18	1.67	2.466	.017
RP	4.33	1.43	5.23	1.17	5.70	1.31	26.540 ***	.232
Recall	.72	.41	.79	.45	.81	.40	1.212	.014

- The mean difference is significant at the levels of ** $p<.01$ and *** $p<.001$

Table 5-8. Post Hoc Bonferroni Test for Pairwise Comparisons (Combination Processors)

	Type of ad (I)	Type of ad (J)	Mean Difference (I-J)
Aad	Informational	Dual	-.869 ***
		Transformational	-.805 ***
	Dual	Informational	.869 ***
		Transformational	.064
Ab	Informational	Dual	-.607 **
		Transformational	-.446 *
	Dual	Informational	.607 **
		Transformational	.162
RP	Informational	Dual	-.900 ***
		Transformational	-1.372 ***
	Dual	Informational	.900 ***
		Transformational	-.472 *

- The mean difference is significant at the levels of * $p<.05$, ** $p<.01$, and *** $p<.001$

Based on the ANOVA findings, **H2** was partially supported in terms of attitude toward the ad (Aad) and attitude toward the brand (Ab). However, the RP (reaction profile) showed somewhat conflicting results to that previously hypothesized. For combination processors, dual ads generated greater Aad, Ab, and RP than informational ads. However, dual ads generated no

difference from transformational ads with respect to Aad and Ab. Also, in terms of RP, transformational ads produced more favorable responses than dual ads did.

H 3: *For feeling processors, advertising effectiveness will be greater for transformational advertisements than for dual or informational advertisements.*

One-way within-subjects ANOVAs were conducted to examine feeling processors' attitudinal responses toward different types of advertisements. All observed *F* values were statistically significant: Attitude toward the Ad, $F(2,172)=38.638$, $p<.001$; Attitude toward the Brand, $F(2,172)=18.013$, $p<.001$; Purchase Intention, $F(2,172)=9.899$, $p<.001$; Reaction Profile, $F(2,172)=59.550$, $p<.001$; Recall, $F(2,172)=4.681$, $p<.01$ (Table 5-9).

Table 5-9. One-Way Within-Subjects ANOVAs for the Evaluation of Advertisements by Feeling Processors (N=87)

	Type of Advertisement						*F*	*Partial* η^2
	Informational ad		Dual ad		Transformational ad			
	M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	3.72	1.48	4.60	1.26	5.64	1.30	38.638 ***	.310
Ab	4.12	1.53	4.38	1.34	5.39	1.23	18.013 ***	.173
PI	3.27	1.56	3.52	1.66	4.33	1.69	9.899 ***	.103
RP	4.02	1.18	4.90	1.09	6.00	1.23	59.550 ***	.412
Recall	.58	.49	.78	.41	.74	.43	4.681 **	.052

- The mean difference is significant at the levels of ** $p<.01$ and *** $p<.001$

Bonferroni pairwise comparison tests ($p<.05$) show that transformational ads evidenced greater attitudinal responses than informational and dual ads across all five dependent measures (Table 5-10). In terms of Aad, transformational ads ($M=5.64$, $SD=1.30$) were greater than informational ads ($M=3.72$, $SD=1.48$) and dual ads ($M=4.60$, $SD=1.26$). Transformational ads ($M=5.39$, $SD=1.23$) produced greater Ab than informational ads ($M=4.12$, $SD=1.53$) and dual ads

(*M*=4.38, *SD*=1.34). In terms of PI (purchase intention), transformational ads (*M*=4.33, *SD*=1.69) were greater than informational ads (*M*=3.27, *SD*=1.56) and dual ads (*M*=3.52, *SD*=1.66). Transformational ads (*M*=6.00, *SD*=1.23) resulted in greater RP than informational ads (*M*=4.02, *SD*=1.18) and dual ads (*M*=4.90, *SD*=1.09). In terms of Recall, transformational ads (*M*=.74, *SD*=.43) were greater than informational ads (*M*=.58, *SD*=.49); however, there was no difference (Mean Difference = .034) between transformational ads and dual ads (*M*=.78, *SD*=.43, *p*>.05).

Table 5-10. Post Hoc Bonferroni Test for Pairwise Comparisons (Feeling Processors)

	Type of ad (I)	Type of ad (J)	Mean Difference (I-J)
Aad	Informational	Dual	-.900 ***
		Transformational	-1.372 ***
	Dual	Informational	.900 ***
		Transformational	-.472 *
Ab	Informational	Dual	-.261
		Transformational	-1.265 ***
	Dual	Informational	.261
		Transformational	-1.004 ***
PI	Informational	Dual	-.246
		Transformational	-1.063 ***
	Dual	Informational	.246
		Transformational	-.817 *
RP	Informational	Dual	-.876 ***
		Transformational	-1.976 ***
	Dual	Informational	.876 ***
		Transformational	-1.100 ***
Recall	Informational	Dual	-.195 *
		Transformational	-.161 *
	Dual	Informational	.195 *
		Transformational	.034

- The mean difference is significant at the levels of * *p*<.05 and *** *p*<.001

Based on the ANOVA findings, **H3** was supported in terms of almost all dependent measures. For feeling processors, transformational ads generated greater Aad, Ab, PI (purchase intention), and RP (reaction profile) than both informational and dual ads. Only in case of recall,

transformational ads were greater than informational ads, but generated no difference when compared to dual ads.

***RQ 1**: What type of ad appeal, if any, is most effective for passive processors? That is, how do passive processors differently respond to the three types of advertising appeals?*

One-way within-subjects ANOVAs were conducted to examine passive processors' attitudinal responses toward different types of advertisements. Among five dependent measures, two observed *F* values were statistically significant: Attitude toward the Ad, $F(2,156)=5.179$, $p<.01$; and Reaction Profile, $F(2,156)=17.247$, $p<.001$ (Table 5-11).

Bonferroni pairwise comparison tests ($p<.05$) suggested that transformational ads ($M=4.94$, $SD=1.27$) demonstrated greater Aad than informational ads ($M=4.29$, $SD=1.37$) (Table 5-12). The tests ($p<.05$) also showed that transformational ads ($M=5.43$, $SD=1.30$) revealed greater RP than informational ads ($M=4.33$, $SD=1.11$) and dual ads ($M=4.99$, $SD=1.18$), and dual ads demonstrated greater RP than informational ads. Although they were not statistically significant, transformational ads showed a nonsignificant tendency to have relatively greater impact in terms of Ab, PI, and recall compared to informational and dual ads (Table 5-11).

Table 5-11. One-Way Within-Subjects ANOVAs for the Evaluation of Advertisements by Passive Processors (N=79)

	Type of Advertisement						*F*	*Partial* η^2
	Informational ad		Dual ad		Transformational ad			
	M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	4.29	1.37	4.57	1.29	4.94	1.27	5.179 **	.062
Ab	4.42	1.27	4.52	1.32	4.72	1.20	1.403	.018
PI	3.38	1.51	3.48	1.57	3.84	1.65	2.363	.029
RP	4.33	1.11	4.99	1.18	5.43	1.30	17.247 ***	.181
Recall	.69	.46	.68	.46	.75	.43	.593	.008

- The mean difference is significant at the levels of ** $p<.01$ and *** $p<.001$

Table 5-12. Post Hoc Bonferroni Test for Pairwise Comparisons (Passive Processors)

	Type of ad (I)	Type of ad (J)	Mean Difference (I-J)
Aad	Informational	Dual	-.283
		Transformational	-.654 **
	Dual	Informational	.283
		Transformational	-.371
RP	Informational	Dual	-.658 **
		Transformational	-1.103 ***
	Dual	Informational	.658 **
		Transformational	-.445

- The mean difference is significant at the levels of ** $p<.01$ and *** $p<.001$

RQ1 was analyzed based on the ANOVA findings. For passive processors, transformational ads were most effective in terms of Aad and RP. Dual ads were more effective for passive processors than informational ads with respect to RP. Interestingly, Table 5-11 shows that the mean of dual ads (4.99) scored almost in the middle between the means of informational ads (4.33) and transformational ads (5.43).

Advertising Appeals and Product Types

Hypothesis 4, 5, 6 predicted the relationship between advertising appeals and the types of products. That is, a match between advertising appeals and product types was expected to be more effective than a mismatch. The data were analyzed by one-way between-subjects ANOVAs for each type of product.

H 4*: For think products, advertising effectiveness will be greater for informational ads than for dual or transformational ads.*

One-way between-subjects ANOVAs were conducted to examine differential effects depending on three types of advertisements for the laser printer (think product). Among five

dependent measures, three observed *F* values were statistically significant: Attitude toward the Ad, $F(2,344)=4.498$, $p<.05$; Attitude toward the Brand, $F(2,344)=4.129$, $p<.05$; and Reaction Profile, $F(2,344)=26.782$, $p<.001$ (Table 5-13).

Table 5-13. One-way ANOVAs for Advertising Appeals for the Think Product (Laser Printer, N=347)

	Type of Advertisement						*F*	*Partial* η^2
	Informational ad		Dual ad		Transformational ad			
	M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	4.82	1.44	4.59	1.34	4.27	1.45	4.498 *	.024
Ab	4.91	1.22	4.70	1.35	4.44	1.23	4.129 *	.023
PI	3.82	1.62	3.43	1.56	3.65	1.54	1.739	.009
RP	5.35	1.15	4.94	1.17	4.24	1.21	26.782 ***	.135
Recall	.85	.35	.82	.38	.80	.39	.513	.003

- The mean difference is significant at the levels of * $p<.05$ and *** $p<.001$

Tukey HSD[10] tests ($p<.05$) indicate that the informational ad ($M=4.82$, $SD=1.44$) showed greater Aad than the transformational ad ($M=4.27$, $SD=1.45$), whereas there was no difference between Aad for the informational ad and the dual ad ($M=4.59$, $SD=1.34$) or between Aad for the transformational ad and the dual ad (Table 5-14). The tests ($p<.05$) also show that the informational ad ($M=4.91$, $SD=1.22$) revealed greater Ab than the transformational ad ($M=4.44$, $SD=1.23$), but there was no difference between Ab for the informational ad and the dual ad ($M=4.70$, $SD=1.35$) or between the transformational ad and the dual ad. In terms of RP, the informational ads ($M=5.35$, $SD=1.15$) exhibited greater RP than both the dual ad ($M=4.94$, $SD=1.17$) and the informational ad ($M=4.24$, $SD=1.21$). Also, the dual ad demonstrated greater RP than the informational ad in the level of statistical significance ($p<.05$).

[10] Hypotheses 4, 5, and 6 were analyzed by between-subjects ANOVA. SPSS 13.0 provides Tukey test for post hoc analysis of between-subjects. Therefore, Tukey HSD test, which is the most conservative approach when considering all pairwise comparisons (Keppel, 1991), was used for post hoc analyses of H4, H5, and H6.

Table 5-14. Post Hoc Tukey HSD Test for Pairwise Comparisons (Laser Printer)

	Type of ad (I)	Type of ad (J)	Mean Difference (I-J)
Aad	Informational	Dual	.233
		Transformational	.550 **
	Dual	Informational	-.233
		Transformational	.316
Ab	Informational	Dual	.218
		Transformational	.174 *
	Dual	Informational	-.218
		Transformational	.255
RP	Informational	Dual	.417 *
		Transformational	1.111 ***
	Dual	Informational	-.417 *
		Transformational	.693 ***

- The mean difference is significant at the levels of * $p<.05$, ** $p<.01$, and *** $p<.001$

Based on the ANOVA findings, **H4** was supported in terms of Aad, Ab, and RP (reaction profile). For the think product, the informational ad generated greater Aad and Ab than the transformational ad, and produced greater RP than both the dual and transformational ad. Even though they were not statistically significant ($p<.05$), there was a tendency within the sample for the informational ad to have relatively greater impact with respect to PI (purchase intention) and recall than for the dual and transformational ad (Table 5-14). The results show that the informational ad was the most effective appeal for the think product compared to the dual and transformational ad.

H 5*: For combination products, advertising effectiveness will be greater for dual ads than for informational or transformational ads.*

One-way between-subjects ANOVAs were conducted to examine differential effects depending on three types of advertisements for the mp3 Player (combination product). Among

five dependent measures, four observed *F* values were statistically significant excluding PI: Attitude toward the Ad, $F(2,344)=21.978$, $p<.001$; Attitude toward the Brand, $F(2,344)=3.063$, $p<.05$; Reaction Profile, $F(2,344)=37.755$, $p<.001$; and Recall, $F(2,344)=3.234$, $p<.05$ (Table 5-15).

Table 5-15. One-way ANOVAs for Advertising Appeals for the Dual Product (MP 3 Player, N=347)

	Type of Advertisement						*F*	*Partial* η^2
	Informational ad		Dual ad		Transformational ad			
	M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	4.55	1.24	5.19	1.24	5.62	1.17	21.978 ***	.113
Ab	4.68	1.26	4.94	1.20	5.09	1.34	3.063 *	.017
PI	3.82	1.64	4.03	1.67	4.23	1.82	1.618	.009
RP	4.69	1.15	5.27	1.09	6.05	1.29	37.755 ***	.180
Recall	.56	.49	.71	.45	.67	.47	3.234 *	.018

- The mean difference is significant at the levels of * $p<.05$ and *** $p<.001$

Table 5-16. Post Hoc Tukey HSD Test for Pairwise Comparisons (MP 3 Player)

	Type of ad (I)	Type of ad (J)	Mean Difference (I-J)	
Aad	Informational	Dual	-.645	***
		Transformational	-1.072	***
	Dual	Informational	.645	***
		Transformational	-.426	*
Ab	Informational	Dual	-.261	
		Transformational	-.413	*
	Dual	Informational	.261	
		Transformational	-.151	
RP	Informational	Dual	-.579	***
		Transformational	-1.361	***
	Dual	Informational	.579	***
		Transformational	-.782	***
Recall	Informational	Dual	-.15	*
		Transformational	-.11	
	Dual	Informational	.15	*
		Transformational	.04	

- The mean difference is significant at the levels of * $p<.05$ and *** $p<.001$

Tukey HSD pairwise comparison tests ($p<.05$) show that the dual ad revealed greater Aad (M=5.19, SD=1.24) and RP (M=5.27, SD=1.09) than the informational ad--Aad (M=4.55, SD=1.24), RP (M=4.69, SD=1.15) (Table 5-16). In the comparisons with the transformational ad, the dual ad showed lower attitudinal responses for both Aad and RP ($p<.05$). In terms of recall, the dual ad demonstrated the highest response (M=.71, SD=.45) over other ads, and recall of the dual ad was significantly greater than the informational ad (M=.56, SD=.49).

Based on the ANOVA findings, **H5** is partially supported in terms of only recall, given the exception that there is no significant difference between the dual ad and the transformational ad. For the mp3 player, although the dual ad was more effective than the informational ad in terms of Aad, RP, and recall, the results indicate that the transformational ad was most effective appeal for the four effectiveness criteria except recall (for PI, there was also a tendency within the sample for the transformational ad to exhibit the highest score, although it was not statistically significant ($p<.05$)).

***H 6**: For feel products, advertising effectiveness will be greater for transformational ads than for informational or dual ads.*

One-way between-subjects ANOVAs were conducted to examine differential effects depending on three types of advertisements for the swimsuit (feel product). Among five dependent measures, three observed F values were statistically significant: Attitude toward the Ad, $F(2,344)=28.207$, $p<.001$; Attitude toward the Brand, $F(2,344)=10.091$, $p<.001$; and Reaction Profile, $F(2,344)=44.682$, $p<.001$ (Table 5-17).

Tukey HSD pairwise comparison tests ($p<.05$) indicate that the transformational ad evidenced greater attitudinal responses than both the informational and dual ad in terms of Aad,

Ab, and RP (Table 5-18). In terms of Aad, the transformational ad (*M*=5.03, *SD*=1.38) was greater than both the informational ad (*M*=3.66, *SD*=1.45) and dual ad (*M*=4.55, *SD*=1.34). Also, the transformational ad (*M*=4.77, *SD*=1.30) indicated greater Ab than both informational ad (*M*=3.98, *SD*=1.52) and dual ad (*M*=4.22, *SD*=1.28). And, the transformational ad (*M*=5.34, *SD*=1.33) produced greater RP scores than both the informational ad (*M*=3.78, *SD*=1.24) and dual ad (*M*=4.79, *SD*=1.07). The dual ad showed greater Aad and RP than the informational ad (Table 5-18).

Table 5-17. One-way ANOVAs for Advertising Appeals for the Feel Product (Swimsuit, N=347)

	Type of Advertisement						*F*	*Partial* η^2
	Informational ad		Dual ad		Transformational ad			
	M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	3.66	1.45	4.55	1.34	5.03	1.38	28.207 ***	.141
Ab	3.98	1.52	4.22	1.28	4.77	1.30	10.091 ***	.055
PI	3.33	1.76	3.28	1.37	3.61	1.69	1.384	.008
RP	3.78	1.24	4.79	1.07	5.34	1.33	47.682 ***	.217
Recall	.68	.46	.67	.47	.73	.44	.545	.003

- The mean difference is significant at the levels of *** p<.001

Table 5-18. Post Hoc Tukey HSD Test for Pairwise Comparisons (Swimsuit)

	Type of ad (I)	Type of ad (J)	Mean Difference (I-J)
Aad	Informational	Dual	-.891 ***
		Transformational	-1.365 ***
	Dual	Informational	.891 ***
		Transformational	-.474 *
Ab	Informational	Dual	-.242
		Transformational	-.786 *
	Dual	Informational	.242
		Transformational	-.543 **
RP	Informational	Dual	-1.012 ***
		Transformational	-1.561 ***
	Dual	Informational	1.012 ***
		Transformational	-.548 **

- The mean difference is significant at the levels of * p<.05, ** p<.01, and *** p<.001

Based on the ANOVA findings, **H6** is supported (p<.05) in terms of attitude toward the ad (Aad), attitude toward the brand (Ab), and reaction profile (RP). For the swimsuit, the transformational ad generated more favorable attitudes toward the ad and brand, and more positive reaction to the ad than both the dual and informational ad. There was a tendency within the sample for the transformational ad to have relatively greater impact in terms of PI and recall than for the informational and dual ad, although they were not statistically significant, (Table 5-17). Across all effectiveness criteria, the transformational ad produced more positive responses than the other two ad appeals.

Table 5-19. Chi-square Tests of Independence of Advertising Appeals for Recall

Product type	Recall	Type of Advertisement					
		Informational ad		Dual ad		Transformational ad	
		N	%	N	%	N	%
Laser printer	Incorrect	17	14.7	20	18.3	24	19.7
	Correct	99	85.3	89	81.7	98	80.3
MP3 player*	Incorrect	51	44.0	35	28.7	36	33.0
	Correct	65	56.0	87	71.3	73	67.0
Swimsuit	Incorrect	35	32.1	38	32.8	33	27.0
	Correct	74	67.9	78	67.2	89	73.0

- The proportion difference is significant at the level of * p < .05

As stated before, brand name recall was coded by a nominal scale, however it was dummy coded for ANOVA analysis. For assurance of the ANOVA results for brand name recall concerning **H4**, **H5**, and **H6**[11]**,** chi-square tests of independence were performed to examine the relation between advertising appeals and recall of the brand name for each product type (Table 5-19). As the between-subjects ANOVA results showed, the results of chi-square tests indicated that the relations between ad appeals and recall was statistically significant (p<.05) for only the mp3 player (combination product). The statistical findings are as follows: the laser printer (think

[11] For H1, H2, H3 and RQ1, single-factor within-subjects analyses were performed to examine the differential advertising effectiveness. Therefore, in those cases, chi-square test of independence cannot be conducted because each single factor (i. e., one information processing style) has no multiple attributes within the factor.

product), X^2 (2, N=347)=1.098, p=.578; the mp3 player, X^2 (2, N=347)=6.404, p<.05; and the swimsuit (feel product), X^2 (2, N=347)=1.097, p=.578. Consequently, in terms of recall, the matching effect between the dual advertisement and the combination product was found.

Advertising Appeals, Information Processing Styles, and Product Types

Hypothesis 7, 8, and 9 examined the relationship among advertising appeals, information processing styles, and product types; whether a match among ad appeals, information processing styles, and product types is effective. Each hypothesis explored whether a combination of ad appeal and information processing style matched to a product type would be more effective than any other combination of ad appeal and information processing style within each product type. The data were analyzed by two-way multivariate analysis of variance (4×3 factorial MANOVA).

H 7*: For think products, advertising effectiveness will be greater for informational ads matched to thinking processors than for any other combination of ad appeal and information processing style.*

A two-way between-subjects MANOVA was conducted on five dependent measures: Attitude toward the Ad, Attitude toward the Brand, Purchase Intention (PI), Reaction Profile (RP), and Recall. For the think product (laser printer), there were significant interaction effects between ad appeal and information processing style in terms of Aad, Ab, PI, and Recall. The statistical findings are as follows: Aad, F(6,335)=4.360, p<.001; Ab, F(6,335)=3.134, p<.01; PI, F(6,335)=2.550, p<.05; and Recall, F(6,335)=2.298, p<.05 (Table 5-20). And, the interaction between the two predictors was also marginally significant in terms of RP, F(6,335)=2.111, p=.052.

Table 5-20. Interaction Effects between Advertising Appeal and Information Processing Style: Laser Printer (2-way Factorial MANOVA, n=347)

Criterion	Information processing style	Type of Advertisement						*F*	*Partial* η^2
		Info. ad		Dual ad		Trans. ad			
		M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	Thinking	4.45	1.37	4.48	1.36	4.52	1.32	4.360 ***	.072
	Combination	4.56	1.40	5.13	1.29	4.58	1.35		
	Feeling	[H]5.70	1.53	4.10	1.27	3.89	1.55		
	Passive	4.57	1.17	4.60	1.32	3.87	1.52		
Ab	Thinking	4.55	1.34	4.82	.81	4.49	.92	3.134 **	.053
	Combination	5.05	1.11	5.27	1.03	4.76	1.20		
	Feeling	[H]5.47	1.10	4.05	1.48	4.28	1.40		
	Passive	4.67	1.10	4.65	1.60	3.99	1.32		
PI	Thinking	3.42	1.68	3.40	1.30	3.96	1.62	2.550 *	.044
	Combination	3.81	1.59	3.53	1.61	3.88	1.74		
	Feeling	[H]4.47	1.51	3.07	1.67	3.54	1.33		
	Passive	3.63	1.54	3.65	1.61	2.85	1.02		
RP	Thinking	5.07	1.23	4.95	.94	4.35	1.23	2.111	.036
	Combination	5.38	1.06	5.02	1.27	4.36	1.36		
	Feeling	[H]5.89	.93	4.63	1.13	4.01	.93		
	Passive	5.14	1.17	5.10	1.27	4.22	1.31		
Recall	Thinking	.78	.42	.75	.44	.88	.33	2.298 *	.040
	Combination	.92	.28	.78	.42	.89	.31		
	Feeling	.89	.31	[H].96	.19	.67	.47		
	Passive	.86	.35	.78	.42	.74	.45		

- The mean difference is significant at the levels of * $p<.05$, ** $p<.01$, and *** $p<.001$

[H] The highest mean score within the effectiveness criterion (among 12 combinations of ad appeal and information processing style).

Based on the MANOVA findings, **H7** was not supported. Although there were significant interaction effects on almost all dependent measures, for the think product no matching effect between the informational ad and thinking processors was found (Table 5-20). That is, the combination of the informational ad and thinking processors did not show the highest response on any effectiveness criterion. Likewise, there was no consistent response pattern across the criteria. The MANOVA results indicate the combination of the informational ad and feeling processors generated the most positive response in terms of Aad, Ab, PI, and RP. However, it cannot be said that the combination of the informational ad, feeling processors, and

think product is either a match or a mismatch. It is, rather, a mixed combination in terms of the affective/cognitive match.

***H8**: For combination products, advertising effectiveness will be greater for dual advertisements matched to combination processors than for any other combination of message appeal and information processing style.*

A two-way between-subjects MANOVA was conducted to examine the interaction effect between ad appeal and information processing style for the combination product. For the mp3 player, there were significant interaction effects between ad appeal and information processing style in terms of all five effectiveness criteria. The statistical findings are as follows: Aad, $F(6,335)=4.506$, $p<.001$; Ab, $F(6,335)=2.185$, $p<.05$; PI, $F(6,335)=2.538$, $p<.05$; RP, $F(6,335)=2.643$, $p<.05$; and Recall, $F(6,335)=2.516$, $p<.05$ (Table 5-21).

H8 was not supported based on the MANOVA findings. Although there were significant interaction effects on all dependent measures, for the combination product a matching effect between the dual ad and combination processors was not found (Table 5-21). The blend of the dual ad and combination processors did not generate the most positive response. Additionally, there was no consistent response pattern across the criteria. The MANOVA results suggests that a combination of the transformational ad and feeling processors generated the most positive response in terms of Aad, Ab, PI, and RP. For the recall measure, the dual ad produced the highest response, but it was targeted to thinking processors not to combination processors.

Table 5-21. Interaction Effects between Advertising Appeal and Information Processing Style: MP3 Player (2-way Factorial MANOVA, n=347)

Criterion	Information processing style	Type of Advertisement						*F*	*Partial* η^2
		Info. ad		Dual ad		Trans. ad			
		M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	Thinking	4.52	1.25	4.68	1.28	5.29	.97	4.506 ***	.075
	Combination	5.05	1.16	5.72	1.29	5.71	1.33		
	Feeling	3.90	1.30	5.38	.89	[H]6.20	.95		
	Passive	4.79	1.01	4.66	1.10	5.32	1.17		
Ab	Thinking	4.54	1.28	4.46	1.07	5.06	1.32	2.185 *	.038
	Combination	4.72	1.53	5.43	1.23	4.96	1.41		
	Feeling	4.67	1.39	5.02	1.16	[H]5.71	1.23		
	Passive	4.83	.85	4.64	1.07	4.72	1.28		
PI	Thinking	4.08	1.70	3.29	1.24	3.62	1.75	2.538 *	.043
	Combination	1.04	1.50	4.42	1.96	4.43	1.70		
	Feeling	3.35	1.75	4.49	1.43	[H]4.93	1.97		
	Passive	3.80	1.53	3.71	1.68	3.96	1.71		
RP	Thinking	4.70	1.24	4.78	1.16	5.68	1.12	2.643 *	.045
	Combination	5.01	1.03	5.54	1.05	6.04	1.29		
	Feeling	4.46	1.30	5.52	.85	[H]6.81	1.16		
	Passive	4.62	.93	5.10	1.17	5.72	1.28		
Recall	Thinking	.44	.50	[H].94	.24	.71	.46	2.516 *	.043
	Combination	.71	.46	.74	.44	.67	.48		
	Feeling	.54	.50	.58	.50	.69	.47		
	Passive	.61	.49	.53	.51	.63	.49		

- The mean difference is significant at the levels of * $p<.05$, ** $p<.01$, and *** $p<.001$

[H] The highest mean score within the effectiveness criterion (among 12 combinations of ad appeal and information processing style).

***H9**: For feel products, advertising effectiveness will be greater for transformational advertisements matched to feeling processors than for any other combination of message appeal and information processing style.*

A two-way between-subjects MANOVA was conducted to examine the interaction effect between ad appeal and information processing style for the swimsuit. For the feel product, significant interaction effect (at the level of .05) was found in terms of PI, $F(6,335)=6.236$ $p<.001$ (Table 5-22). And, the interaction between the two factors was marginally significant on Ab, $F(6,335)=2.121$, $p=.051$ and Recall, $F(6,335)=2.038$, $p=.060$.

Table 5-22. Interaction Effects between Advertising Appeal and Information Processing Style: Swimsuit (2-way Factorial MANOVA, n=347)

Criterion	Information processing style	Type of Advertisement						*F*	*Partial* η^2
		Info. ad		Dual ad		Trans. ad			
		M	*SD*	*M*	*SD*	*M*	*SD*		
Aad	Thinking	3.39	1.20	4.71	.99	4.60	1.42	1.618	.028
	Combination	3.74	1.50	4.90	1.78	[H]5.37	1.42		
	Feeling	3.30	1.52	4.13	1.17	5.14	1.16		
	Passive	4.10	1.46	4.48	1.40	4.87	1.46		
Ab	Thinking	4.16	1.44	4.19	1.18	4.25	1.27	2.121	.037
	Combination	4.03	1.52	4.52	1.73	4.93	1.26		
	Feeling	3.33	1.55	3.95	1.14	[H]5.06	1.30		
	Passive	4.33	1.45	4.28	1.10	4.80	1.25		
PI	Thinking	[H]4.23	1.68	3.77	.92	2.54	1.45	6.236 *	.100
	Combination	3.02	1.91	3.33	1.67	4.22	1.68		
	Feeling	2.84	1.58	2.78	1.36	3.74	1.45		
	Passive	3.33	1.65	3.11	1.42	3.94	1.75		
RP	Thinking	3.72	1.07	4.94	.99	4.88	1.21	1.596	.028
	Combination	3.66	1.55	4.94	1.14	[H]5.65	1.43		
	Feeling	3.53	1.17	4.49	1.07	5.41	1.17		
	Passive	4.14	1.10	4.78	1.10	5.39	1.46		
Recall	Thinking	.71	.46	.56	.50	.59	.49	2.038	.035
	Combination	.70	.46	.63	.49	.84	.37		
	Feeling	.54	.50	[H].86	.35	.67	.47		
	Passive	.75	.44	.68	.47	.86	.37		

- The mean difference is significant at the levels of * $p<.05$

[H] The highest mean score within the effectiveness criterion (among 12 combinations of ad appeal and information processing style).

Based on the MANOVA findings, **H9** was not supported. For the feel product, the matching effect between the transformational ad and feeling processors was not found (Table 5-22). Although the combination of the transformational ad and feeling processors generated the most positive response on Ab, it was only marginally significant (p=.051) and explained just 4% of the total variance (partial η^2=.037). In addition, there was no consistent response pattern across the criteria.

RQ2*: What kind of match between message appeal and product type, if any, will be most effective for passive processors?*

One-way between-subjects ANOVAs were conducted to examine passive processors' attitudinal responses toward different types of advertisements across the three types of products. Among five effectiveness criteria across the products, one observed *F* value was statistically significant (in terms of RP) for each product type. The ANOVA statistics of the Reaction Profile for each ad for each product are as follows: the laser printer, $F(2,76)=3.729$, $p<.05$; the mp3 player, $F(2,76)=6.798$, $p<.01$; the swimsuit, $F(2,76)=6.705$, $p<.05$ (Table 5-23). For passive processors, regardless of the product type, the three types of ad appeals did not generate any difference in terms of Aad, Ab, PI, or recall.

Table 5-23. One-Way ANOVAs for Passive Processors' Responses to Ad Appeals across Three Products (N=79)

		Type of Advertisement						*F*	*Partial* η^2
		Info. ad (n=28)		Dual ad (n=32)		Trans. ad (n=19)			
		M	*SD*	*M*	*SD*	*M*	*SD*		
Laser Printer	Aad	4.57	1.17	4.60	1.32	3.87	1.52	2.085	.052
	Ab	4.67	1.10	1.65	1.60	3.99	1.32	1.686	.041
	PI	3.63	1.54	3.65	1.61	2.85	1.02	2.059	.051
	RP	5.14	1.17	5.10	1.27	4.22	1.31	3.729 *	.089
	Recall	.86	.35	.78	.42	.74	.45	.537	.014
MP3 Player	Aad	4.79	1.01	4.66	1.10	5.32	1.17	2.695	.066
	Ab	4.83	.85	4.64	1.07	4.72	1.28	.165	.004
	PI	3.80	1.53	3.71	1.68	3.96	1.71	.151	.004
	RP	4.62	.93	5.10	1.17	5.72	1.28	6.798 **	.152
	Recall	.61	.49	.53	.51	.63	.49	.246	.006
Swimsuit	Aad	4.10	1.46	4.48	1.40	4.87	1.46	1.742	.044
	Ab	4.33	1.45	4.28	1.10	4.80	1.25	1.075	.027
	PI	3.33	1.65	3.11	1.42	3.94	1.75	1.558	.039
	RP	4.14	1.10	4.78	1.10	5.39	1.46	6.705 **	.150
	Recall	.75	.44	.68	.47	.84	.37	.787	.020

- The mean difference is significant at the levels of * $p<.05$ and ** $p<.01$

For the laser printer, in terms of RP (Reaction Profile), passive processors responded to the informational ad (*M*=5.14, *SD*=1.17) more positively than to the transformational ad (*M*=4.22, *SD*=1.31). The dual ad (*M*=5.10, *SD*=1.27) also generated a more positive RP score than the transformational ad did (Table 5-24). However, there was no difference between the informational ad and the dual ad on the RP criterion. For the mp3 player, in terms of RP, passive processors responded to the transformational ad (*M*=5.72, *SD*=1.28) more favorably than to the informational ad (*M*=4.62, *SD*=.93), while the dual ad (*M*=5.10, *SD*=1.17) did not exhibit any significant difference from the other ads. For the swimsuit, in terms of RP, passive processors more positively responded to the transformational ad (*M*=5.39, *SD*=1.46) than to the informational ad (*M*=4.14, *SD*=1.10), whereas there was no difference between the transformational ad and the dual ad (*M*=4.78, *SD*=1.10) in terms of the RP effectiveness criterion.

Table 5-24. Post Hoc Tukey HSD Test for Pairwise Comparisons (Passive Processors)

		Type of ad (I)	Type of ad (J)	Mean Difference (I-J)
Laser Printer	RP	Informational	Dual	.038
			Transformational	.916 *
		Dual	Informational	-.038
			Transformational	.878 *
MP3 Player	RP	Informational	Dual	-.480
			Transformational	-1.091 ***
		Dual	Informational	.480
			Transformational	-.610
Swimsuit	RP	Informational	Dual	-.642
			Transformational	-1.254 **
		Dual	Informational	.642
			Transformational	-.612

- The mean difference is significant at the levels of * $p<.05$, ** $p<.01$, and *** $p<.001$

RQ2 was analyzed based on these ANOVA findings. For passive processors, except the dual product, there was a consistent response pattern for a match between message appeal and

product type in terms of RP. The informational ad of the laser printer showed greater effects in terms of RP than the transformational ad; and the transformational ad for the feel product suggested greater effects in terms of RP than the informational ad. That is, the match between the think product and the informational ad was more effective than the mismatch between the product and the transformational ad; and the match between the feel product and the transformational ad was more effective than the mismatch between the feel product and the informational ad. However, no matching effect was found for the combination product. In sum, for passive processors, the informational ad for the think product was more effective than the dual and transformational ad for the think product in terms of RP. And, the transformational ad was more effective than the informational ad for the combination product as well as for the feel product in terms of RP.

Supplementary Analysis

From the results of 2-way MANOVA for Hypotheses 7, 8, and 9, the results of the multivariate tests suggested treating the five dependent measures as a variate. All Box's *M* tests were significant for the three product types. The statistical findings are as follows: laser printer, Box's M=285.312, p<.001; mp3 player, Box's M=223.587, p<.05; and swimsuit, Box's M=251.372, p<.001.

Based on Pillai's Trace,[12] the results show that the dependent variate was significantly affected by the interaction between ad appeal and information processing style for each product type: laser printer, Pillai's Trace=.183, $F(6,335)=2.214$, p<.001, partial η^2=.037 ; mp3 player,

[12] According to Keppel (1991), if the Box's *M* test is statistically significant, Pillai's trace is recommended for analyzing the multivariate effect of independent variable(s).

Pillai's Trace=.216, $F(6,335)=2.518$, $p<.001$, partial $\eta^2=.043$; and swimsuit, Pillai's Trace=.223, $F(6,335)=2.607$, $p<.001$, partial $\eta^2=.045$.

Interestingly, Bartlett's tests of sphericity were statistically significant ($p<.001$) for the analyses of the interaction effect between ad appeal and information processing style for the three product types. The statistical findings are as follows: laser printer, approx. X^2 (14, N=347)=1302.494, $p<.001$; mp3 player, approx. X^2 (14, N=347)=1210.194, $p<.001$; and swimsuit, approx. X^2 (14, N=347)=1321.632, $p<.001$. The results indicate that there was sufficient correlation among the five dependent measures, which may suggest that those five criteria measure a common construct and "may profitably be combined into a single measure and examined with a univariate analysis of variance" (Meyers et al., 2006). Accordingly, the matching effect among ad appeal, information processing style, and product type can be analyzed based on a composite variate score as a global evaluation for the ad, instead of analyzing five effectiveness criteria separately.

Nevertheless, the five criteria were measured by different scales. Aad, Ab, and PI were measured by 7-point scale; Reaction Profile was measured by 8-point scale; and Recall was measured by using an open-ended question, and coded as a nominal variable, and then dummy-coded for ANOVA analysis.

In order to test whether the five criteria are unidimensional constructs, Cronbach's alpha tests were conducted. The results indicate that the internal consistency among dependent measures were high (laser printer, $\alpha=.822$; mp3 player, $\alpha=.817$; and swimsuit, $\alpha=.839$). However, the results also show that the alpha levels would be increased, if Recall were to be deleted (the increased alpha scores: laser printer, $\alpha=.872$; mp3 player, $\alpha=.866$; and swimsuit, $\alpha=.897$).

For assurance of the reliability test, Correlation analyses among the dependent measures were also performed. As a result, the four effectiveness criteria except Recall were highly and positively correlated with each other, and every correlation among the four was statistically significant ($p<.05$) for all three product types. Pearson correlations between Aad, Ab, PI, and RP are as follows: laser printer (range from $r=.558$ to $r=.771$), mp3 player (range from $r=.574$ to $r=.853$), and swimsuit (range from $r=.645$ to $r=.842$). However, the correlations between Recall and other criteria were considerably lower than others: laser printer (range from $r=-.010$ to $r=.187$), mp3 player (range from $r=.073$ to $r=.153$), and swimsuit (range from $r=.021$ to $r=.133$).

In all, a series of statistical analyses indicates that the five effectiveness criteria can be analyzed as a composite variate score to assessing global evaluation of an advertisement. And, the analysis using the composite score may be more reliable if Recall is removed from creating the new score, because Recall was measured by relatively different scale from the others and was not highly correlated with other criteria.

Standardized z-scores were used to create composite scores. The four dependent measures (Aad , Ab, PI, and RP) were standardized within each product type. These z-scores were averaged and re-standardized, then subjected to 2-way analysis of variance (ANOVA) for additional analyses of the matching effect among the three constructs (ad appeal, information processing style, and product type).

The 2-way ANOVA results show that the interaction effect between ad appeal and information processing style were statistically significant ($p<.05$) for all product types (Table 5-25). The statistical findings are as follows: laser printer, $F(6,335)=3.700$, $p<.05$; mp3 player, $F(6,335)=3.388$, $p<.05$; and swimsuit, $F(6,335)=2.728$, $p<.05$. Also, the main effect of ad appeal

was significant for each product type: laser printer, $F(2,335)=9.794$, $p<.001$; mp3 player, $F(2,335)=16.678$, $p<.001$; and swimsuit, $F(2,335)=19.917$, $p<.001$, whereas the main effect of information processing style was only significant for the mp3 player (combination product), $F(3,335)=4.977$, $p<.05$. Interestingly, for all product types, the partial η^2 of ad appeal was greater than the partial η^2 of the interaction between the two predictors. That is, ad appeal is a more powerful predictor for assessing advertising effectiveness than when both ad appeal and information processing style are considered in combination. For example, in the case of the swimsuit, ad appeal solely explained 10.6 percent of the total variance, while the interaction accounted for only 4.7 percent.

Table 5-25. Two-way ANOVAs for the Relationship between Ad Appeal and Information Processing Style within Each Product Type, with A Variate as A Dependent Variable (N=347)

Source		*SS*	*df*	*F*	*Partial* η^2
Laser printer	Ad appeal	13.142	2	9.794 ***	.065
	Processing style	2.948	3	1.464	.013
	Ad appeal × Processing style	14.893	6	3.700 ***	.062
Mp3 player	Ad appeal	20.813	2	16.678 ***	.091
	Processing style	9.317	3	4.977 **	.043
	Ad appeal × Processing style	12.682	6	3.388 **	.057
Swimsuit	Ad appeal	26.658	2	19.917 ***	.106
	Processing style	3.606	3	1.796	.016
	Ad appeal × Processing style	10.953	6	2.728 *	.047

- The mean difference is significant at the levels of * $p<.05$, ** $p<.01$, and *** $p<.001$

Figures 5-2, 5-3, and 5-4 visibly show the main and interaction effects generated by the two predictors (ad appeal and information processing style). In terms of the affective/cognitive matching effect, the significant interactions did not exhibit a consistent response pattern across the three figures. Instead, both Figure 5-2 and Figure 5-4 indicate that there are matching effects

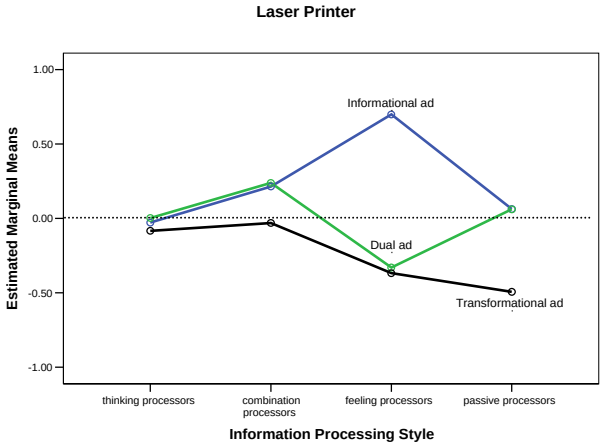

Figure 5-2. Global Evaluation of Advertisements for Laser Printer

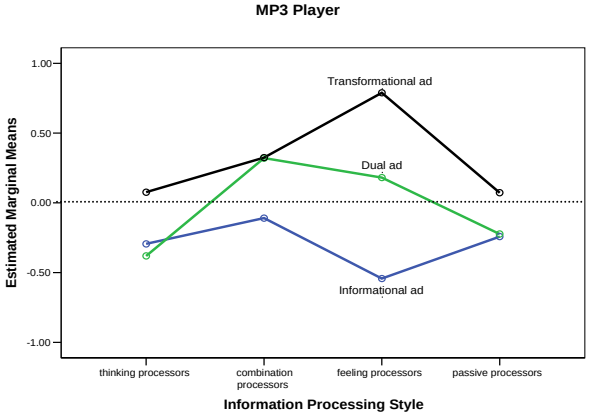

Figure 5-3. Global Evaluation of Advertisements for MP3 Player

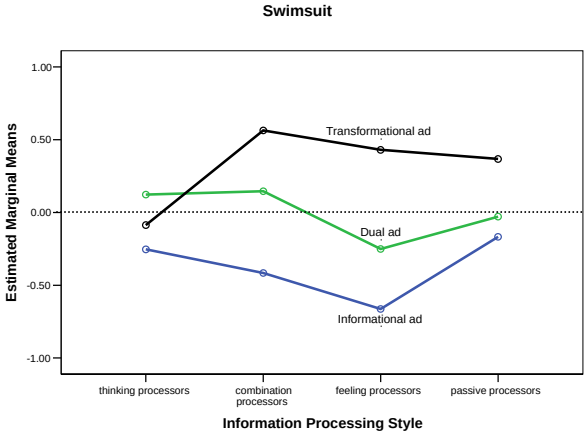

Figure 5-4. Global Evaluation of Advertisements for Swimsuit

between the informational ad and the think product (laser printer) as well as between the transformational ad and the feel product (swimsuit) across almost all information processing styles, excluding only thinking processors' response to the transformational ad for the swimsuit.

In addition, an affective/cognitive match between ad appeal and product type is more effective than a mismatch for both the think product (Figure 5-2) and the feel product (Figure 5-4). Indeed, the message strategy mismatched to the product type was apparently least effective for the laser printer and the swimsuit. For mp3 player (combination product), no matching effect was found among ad appeal, information processing style, and product type. Figure 5-3 shows that the transformational ad produces greater responses than other types of ads across all information processing styles. Passive processors responded least positively to the transformational ad for the think product and to the informational ad for the feel product than other ads within each of these product types. The transformational ad for the mp3 player generated greater response from passive processors than other types of advertisements did. These composite results for passive processors are exactly parallel to the ANOVA result for the Reaction Profile (RP), term in the variate reported in Table 5-23 (**RQ2)**.

CHAPTER 6

CONCLUSIONS AND DISCUSSION

Summary of Findings

The goal of this study was to examine the affective/cognitive matching effect using three constructs--advertising message appeal, information processing style, and product type, which were classified into thirty-six combinations based on the interaction between affect and cognition. The first set of hypotheses (H1, H2, and H3) and Research Question 1 were intended to assess the affective/cognitive matching effect between advertising message appeal and information processing style. The second set of hypotheses (H4, H5, and H6) explored the relationship between advertising message strategy and product type with respect to the matching effect hypothesis. And, the last set of hypotheses (H7, H8, and H9) and Research Question 2 assessed interaction effects among the three constructs: message appeal, processing style, and product type.

In summary, for a match of advertising appeal to information processing style, a matching effect between feeling processors and transformational ads was clearly found while other combinations were only partially supported. Interestingly, transformational ads were very persuasive across processing styles. For a match between advertising appeal and product type, a matching effect was found when the informational ad matched to the think product and the transformational ad matched to the feel product. However, there was no three-way affective/ cognitive matching or mismatching effect among advertising message strategy,

Table 6-1. Summary of the Findings for Affective/Cognitive Matching Effects

Relationship	Hypotheses & Research Question	Effectiveness Criteria [a]	Matching Effect	Differences in Advertisements [b]	
				$P < .05$	$P > .05$ [c]
Information processing style & Advertising message strategy	**H1** Thinking processors & Informational ads	Aad			T > D > I
		Ab			T > D > I
		PI	Match	I > D, I > T	
		RP	Mismatch	T > I, D > I	
		Recall			D > T > I
	H2 Combination processors & Dual ads	Aad	*Partial match*	D > I, T > I	
		Ab	*Partial match*	D > I, T > I	
		PI			T > D > I
		RP		T > D > I	
		Recall			T > D > I
	H3 Feeling processors & Transformational ads	Aad	Match	T > D > I	
		Ab	Match	T > I, T > D	
		PI	Match	T > I, T > D	
		RP	Match	T > D > I	
		Recall	*Partial match*	T > I, D > I	
	RQ1 Passive processors & 3 ad appeals	Aad	▪ Transformational ads were most effective ▪ Informational ads were least effective	T > I	
		Ab			T > D & I
		PI			T > D & I
		RP		T > I, D > I	
		Recall			T > D & I
Product type & Advertising message strategy	**H4** Think product & The Informational ad	Aad	Match	I > T	I > D
		Ab	Match	I > T	I > D
		PI			I > D & T
		RP	Match	I > D > T	
		Recall			I > D & T
	H5 Combination product & The dual ad	Aad		T > D > I	
		Ab		T > I	
		PI			T > D & I
		RP		T > D > I	
		Recall	Match	D > I	D > T
	H6 Feel product & The transformational ad	Aad	Match	T > D > I	
		Ab	Match	T > D, T > I	
		PI			T > I > D
		RP	Match	T > D > I	
		Recall			T > D > I

[a] Effectiveness Criteria: Aad (Attitude toward the advertisement), Ab (Attitude toward the brand), PI (Purchase Intention), RP (Reaction Profile), and Recall (unaided brand name recall).

[b] Advertisements: I (Informational ad), D (Dual ad), and T (Transformational ad).

[c] Non-significant tendency within the sample

Table 6-2. Summary of the Findings for Three-Way Affective/Cognitive Matching Effects

Relationship	Hypotheses & Research Question	Effectiveness Criteria [d]	Matching effect	Differences in Advertisements [e]	
				$P < .05$	$P > .05$ [f]
3 Information processing styles & Advertising message strategy	**H7** Thinking processors & the informational ad in think product **H8** Combination processors & the dual ad in combination product **H9** Feeling processors & the transformational ad in feel product	Aad	No Match or Mismatch		
		Ab			
		PI			
		RP			
		Recall			
Advertising message strategies to Passive processors	**RQ2**				
	Think product	RP	Informational ad (Match)	I > D > T	
	Combination product	RP		T > I	
	Feel product	RP	Transformational ad (Match)	T > I	T > D
4 Information processing styles & Advertising message strategies	**Supplementary Analysis**				
	Think product	Composite effectiveness score	Informational ad for think product (Match)	▪ The informational ad was most effective ▪ The transformational ad was least effective	
	Combination product				
	Feel product		Transformational ad for feel product (Match)	▪ The transformational ad was most effective ▪ The informational ad was least effective	

[d] Effectiveness Criteria: Aad (Attitude toward the advertisement), Ab (Attitude toward the brand), PI (Purchase Intention), RP (Reaction Profile), and Recall (unaided brand name recall).
[e] Advertising message strategies: I (Informational ad), D (Dual ad), and T (Transformational ad).
[f] Non-significant tendency within the sample

information processing style, and product type. Indeed, the results of the three-way match reconfirmed the findings from the match between product type and advertising appeal, implying no direct influence by information processing style. For passive processors, both a match of the informational advertisement to the think product and a match of the transformational advertisement to the feel product were more effective than a mismatch strategy for each. Table 6-1 and 6-2 summarize the major conclusions suggested by the study's findings.

A match between advertising message strategy and information processing style. From Hypothesis 1 to Hypothesis 3, it was hypothesized that a match of ad appeals to information processing style is more effective than mismatch or non-match. The results show that a matching effect was obtained only when transformational ads matched to feeling processors. However, for informational ads and dual ads, the matching effects were not clear (see Table 6-1). The specific results are as the following.

- *A match of informational ads to thinking processors*: The matching effects were ambiguous. For purchase intention, informational ads were most effective than dual or transformational ads. However, for the reaction profile responses, transformational and dual ads were more effective than informational ads, indicating a mismatch (transformational ads to thinking processors) and a non-match (dual ads to thinking processors) produced greater effectiveness than a match.

- *A match of dual ads to combination processors*: Partial evidence of the matching effect was found. With respect to attitude toward the ad and attitude toward the brand, dual ads generated more positive responses than informational ads, but did not produce a significant difference from transformational ads. Therefore, the results were limited.

- *A match of transformational ads to feeling processors*: The results revealed that transformational ads were more effective for feeling processors than informational ads and

dual ads in terms of attitude toward the ad, attitude toward the brand, purchase intention, and reaction profile. In the case of recall, transformation ads produced higher levels of brand recall than informational ads, but did not generate a difference from dual ads.

- *The differential effects of advertising message appeals to passive processors*: For passive processors, transformational ads were more effective advertising message strategy than all the others and informational ads were less effective.

- Interestingly, transformational ads were overall most effective across all information processing styles; on the other hand, informational ads were the least effective message appeal.

Accordingly, it cannot be decisively concluded that a match between advertising message appeal and information processing style is more effective than a mismatch or non-match. The reasons are as follows. First, the matching effects found were very limited for informational ads to thinking processors and dual ads to combination processors. Second, transformational ads were most influential across information processing styles. This can raise an issue that the matching effects of transformational ads to feeling processors may be generated by the influence of transformational ads themselves, not by the match. Therefore, we cannot simply conclude that there was a clear matching effect between transformational ads and feeling processors. This issue will be discussed in greater detail in the discussion section.

A match of advertising message strategy to product type. With Hypothesis 4, 5, and 6, matching effects between advertising appeal and product type were predicted. The results provided some support for the hypotheses presented (see Table 6-1). A match of advertising appeal to product type was more effective than a mismatch and non-match, when the

informational advertisement matched the think product and when the transformational advertisement matched the feel product. The specific results are as follows.

- *A match between the informational ad and the think product*: Obvious matching effects were obtained. The informational ad for the think product generated significantly greater advertising effectiveness than the dual and transformational ad in terms of attitude toward the ad, attitude toward the brand, and reaction profile. There was also a non-significant tendency within the sample for the informational ad to work better when matched to the think product than the dual and transformational ad, in terms of purchase intention and recall.

- *A match between the dual ad and the combination product:* There was partial support for the matching effect that was predicted in H5 with respect only to unaided brand recall. For recall, the dual ad for the combination product indicated the highest score. The dual ad produced significantly greater responses than the informational ad; however, there was no statistical difference between the dual ad and the transformational ad for the combination product. For the other advertising effectiveness criteria (excluding recall), the transformational ad produced the greatest responses (including a non-significant tendency for purchase intention) indicating neither a match nor a mismatch (i.e., a non-match).

- *A match between the transformational ad and the feel* product: The transformational ad for the feel product produced significantly more favorable ad effectiveness than the informational and dual ad in terms of attitude toward the ad, attitude toward the brand, and reaction profile. Also, there was a non significant tendency for the transformational ad to work better when matched to the feel product than the informational and dual ad in terms of purchase intention and recall.

In summary, the informational advertisement was most effective when matched to the think product, and the transformational advertisement was most effective when matched to the feel product and targeted to the combination product.

A match among advertising message strategy, information processing style, and product type. For the three-way matching effect, the results suggested that there was no matching or mismatching effect (see Table 6-2). Rather, the results reconfirm the findings from prior hypotheses of a match between information processing style and advertising appeal, and a match between product type and advertising appeal. Although there were significant two-way interaction effects within each product type in terms of all effectiveness criteria for a cognitive blend (i.e., the combination of the informational advertisement, thinking processors, and the think product), and for a combinational blend (i.e., the mixture of the dual advertisement, combination processors, and the combination product), and in terms of PI for an affective blend (i.e., the combination of the transformational advertisement, feeling processors, and the feel product), none of these significant interactions supported the affective/cognitive matching effect, nor did they show a consistent response pattern.

The supplementary analysis results also evidenced that there was no three-way matching effect (see Table 6-2). These results revealed that a match between advertising message strategy and product type was more effective than a mismatch for both the think and the feel product across all information processing styles (excluding only the thinking processors' composite response to the transformational ad for the feel product, which was lower than that responses to the dual ad). For passive processors, the match of advertising appeal to the product type was more effective than the mismatch. That is, for passive processors, the informational advertisement matched to the think product generated a more positive composite response than the transformational advertisement, and the transformational advertisement matched to the feel product produced a more favorable composite response than the informational advertisement. In

the case of the combination product, the transformational advertisement was revealed to be the most effective advertising strategy across all information processing styles.

Discussion

With respect to the affective/cognitive matching effect between individual characteristics and advertising message appeal, this study revealed a matching effect for transformational ads matched to feeling processors, but produced ambiguous matching effects for informational ads targeted to thinking processors also, limited matching effects were observed for dual ads targeted to combination processors. These results are different from the study of Ruiz and Sicilia (2004), although they also found that a match can generate more positive attitudes than a mismatch. Their research found that a match was more influential than a mismatch when an informational ad is matched to thinking processors and a dual ad is matched to combination processors. The reason for the difference in the effective matching combination between this study and Ruiz and Sicilia's study may be due to the products used in each study. They used only one product category—a camera, which they argued, is a more cognitive product than an emotional one. The present study, which used three product types, revealed that the relation between ad appeal and product type is relatively dominant for predicting the affective/cognitive matching effect than is the matching effect between ad appeal and information processing style. Therefore, it can be speculated that the particular product characteristic of the camera might limit the prior findings. That is, the cognitive product might cause an emotional ad not to generate more positive responses, especially from feeling processors.

The matching effect between advertising message appeal and information processing style was proposed. This is based on the argument that messages matched to individual

characteristics may make them more easily recognize the strength of the message, in turn, making them more likely to generate an agreement with the message. Therefore, the matched messages can produce more positive responses, that is to say, greater effectiveness. However, such matching effects are in doubt from the results of this study. The matching effect between advertising messages and individual characteristics was found only in the combination of transformational ads and feeling processors. As stated previously, this apparent matching effect generated from transformational ads targeted to feeling processors may not be produced by the match itself, but rather may produced by the influence of transformational advertising itself. That is, a match between advertising messages and individual characteristics does not necessarily generate more positive effects but just enhances message processing. Therefore, there may be a "missing link" between the match and the effect. When an advertising appeal is matched to information processing style, individuals are more likely to process the matched message. However, processing activity does not necessarily lead to positive responses to the given message. Instead, other factors (for example, the strategic focus of the ad such as strength or quality of the argument) may be critical for generating positive message effects.

Some studies that revealed an affective/cognitive matching effect between the basis of attitude and message appeal suggested a relative matching effect favoring affective message appeals (Edwards, 1990; Edwards & von Hippel, 1995; Fabrigar & Petty, 1999). That is, an affective message is more influential in shaping affective-based attitudes than it is in influencing cognitive-based attitudes, whereas cognitive-based attitudes show almost equal change for both message appeals. Considering that both prior attitude and information processing style are based on different individual characteristics, the results of the present study are parallel to the results of

previous studies because this study also shows a relative match in favor of transformational advertising messages.

Some researchers reasoned that the relative matching effect may be explained by the nature of the evaluative processes of affect and cognition (Fabrigar & Petty, 1999). According to Zajonc (1980) and Zajonc and Markus (1982), all evaluative responses are principally based on affect but not necessarily cognition. That is, affective attitudes can be perceived as affectively processed evaluations, without cognition or with very limited cognition. Alternatively, cognitive attitudes can be conceptualized as affective evaluations involving particular cognitions about the given object. Accordingly, Fabrigar and Petty suggested that affective messages are likely to be more generally influential than cognitive messages, while cognitive messages generate little capability to change attitudes. This notion can be a plausible interpretation for the present study as well. From the results of this study, transformational ads largely exhibited more influential impact than informational and dual ads. Indeed, informational and dual ads generated limited influence. This thinking can also allow us to understand responses by passive processors who do not show a particular information processing pattern in terms of affect and cognition. For passive processors, transformational ads were revealed as the most effective strategy and informational ads were the least influential.

This study demonstrated that a match of advertising appeal to product type is more effective than a mismatch across almost all information processing styles. The matching effect presented in this study indicates some meaningful support for existing approaches concerning the relationship between advertising message appeal and product type. The result provided some support for the FCB recommendation (e.g., Vaughn, 1980) for choosing an advertising message strategy. That is, the argument that the development of a message strategy should be based on

the product characteristics of think and feel is still helpful. Also, this study supports the notion of the functional approach, which argues that affective advertising messages are effective when the product is value-expressive, while cognitive messages are effective when the product is utilitarian (e.g., Johar & Sirgy, 1991; Shavitt, 1989).

In contrast to the think and feel products, for the combination product, there was no matching effect produced by the dual ad. Instead, the transformational ad exhibited relative dominance when compared to the dual ad, which was more powerful than the informational ad. This inconsistent result with other product types may occur as a result of the difference between conceptual and experiential attitudes (Mackey, 1984; Reed & Ewing, 2004). Conceptual attitudes are developed prior to purchase; alternatively, experiential attitudes are developed in a decision-making situation, in a purchase situation, or after purchase. From this view, individuals' conceptual attitudes toward the mp3 player may be both affective and cognitive simultaneously, but their experiential attitudes may be more affective than both, when they actually make a decision to purchase or evaluate the brand. This difference in types of attitude may indicate why the transformational ad was more effective than the other ads for the combination product.

This study demonstrated that Wells' (1964) reaction profile is a meaningful and sensitive criterion for measuring advertising effectiveness. For Hypothesis 1 through Hypothesis 6 and Research Question 1, the reaction profile produced high explanatory power of the total variance exhibiting the highest partial *Eta squared* (η^2) among the five effectiveness criteria from every ANOVA analysis. And, the reaction profile distinguished more sensitively the differential effects of the three types of advertising appeals. In Hypothesis 1 to Hypothesis 6 and Research Question 1, significant differences among advertising appeals were found only for the reaction

profile responses, while other criteria (attitude toward the ad, attitude toward the brand, purchase intention, and recall) did not consistently produce significant differences across the analyses.

Implications

This study was designed to investigate affective/cognitive advertising effects generated by a match of advertising messages to information processing styles and/or to product types. The present study has widened the scope of affective/cognitive matching effect research, involving three crucial factors that potentially influence advertising effects. Previous studies concerning this research issue have focused on a match of affective/cognitive messages to prior attitude, individual characteristics or to product traits separately. However, this study investigated all three key variables which may moderate the relationship between message appeal and the effect of the message, demonstrating a more comprehensive approach for matching effect research in a broader advertising context.

The interaction of affect and cognition suggests more detailed approaches, involving studying more than two types (categories) of important variables. For specification of advertising message strategy, it is possible for researchers and practitioners to classify advertising message strategies into more than two types by including dual advertising appeals that contain both affective and cognitive characteristics. Also, the notion of the interaction can be applied to more discriminating classifications of product types or brand positioning in terms of affect/cognition as well as for consumer segments. These more detailed classifications can guide marketers or advertising practitioners to have a new scheme relating the question of which type of advertising would be most appropriate for a certain type of product or group of consumers.

The main implication from the findings is that practitioners need to be sensitive to the product type in terms of affect and cognition when determining an advertising message strategy. For think and feel products, the matching effect of advertising message appeal and product type was clearly evident. This suggests a managerial implication for creating advertising strategy at the basic stage of message development, using the product type as a good starting point for determining the fundamental message strategy.

Another implication is that this study shows the categorization of information processing styles into four types (rather than three styles by Ruiz and Sicilia (2004)) is useful for studying personality-based preferences, in that passive processors seemed particularly sensitive to variations in advertising message content. In addition, this study implies that information processing styles may not directly influence advertising message effects.

Limitations & Considerations for Future Research

There were some limitations to the research when interpreting the results. First, the experiment was implemented in a laboratory setting. Although every session of the experiment was carefully controlled, keeping the entire experimental situation across sessions constant, participants were exposed to an advertisement for twenty seconds no matter what the number of rational claims or the size and amount of pictorial elements in a given advertisement. This artificial situation of controlled forced exposure may have produced some unintended results in the experiment. Future researchers should strive make the experimental situation more realistic. For instance, using a magazine-like booklet that contains both articles and advertisements could be one of the alternatives.

Second, the manipulation of advertisements needs to be more sophisticated in future research. In this study, informational elements were principally manipulated with verbal claims; alternatively, transformational elements were mostly manipulated with favorable visual elements. That is, verbal components represented informational characteristics and visual components represented transformational characteristics of the advertisements. Although manipulation checks showed these treatments to be valid, future research is encouraged to use well-manipulated stimulus materials such as advertisements which also manipulate transformational verbal claims and informational visual contents. Third, like previous studies concerning an affective/cognitive match, this study focused on print advertising content. Other advertising media content such as television commercials should be examined in order to broaden our understanding of the matching effect. Then, the results need to be compared to previous findings with print advertisements. Fourth, this study used a student sample, which may limit the extent that the findings of the matching effects discovered in the present study may be generalized. To make generalizability stronger, it is important for future research to employ probability sampling methods and/or representatives of more general populations.

Fifth, all three product categories used in the present study were in the high involvement quadrants of the FCB grid. Further studies are encouraged to explore and compare other product types on the low involvement side. Sixth, this study focused on different attitudinal and cognitive responses caused by product categories rather than by brands. As some researchers have argued, although the affective/ cognitive product classification is reasonably well documented in the related literatures, the affective/cognitive distinction may actually be based on the brand. Indeed, advertising efforts mostly concentrate on a specific brand whose positioning varies within its product category. This argument is one of the reasons why only fictitious

brands were used in the present study. Future research in this area is also encouraged to investigate the matching effect with respect to the differences by brand, which can allow us to further explore the consumer decision process. This may be done by utilizing multiple brands in the same product category.

Additionally, the investigation of the matching effect was based on the mean level of different responses to each advertisement. That is, the analyses and comparisons were not essentially focused on how people process information and which elements in an advertisement were more persuasive than others depending on different information processing styles. Indeed, for examining the differential impact of the matching effect generated by information processing styles, it would be appropriate for researchers to more directly study how individuals with different processing styles process a given advertising appeal. Such research concerning attitude formation (i.e., the mechanism by which attitudes occur) could give us more insights into how passive processors actually process advertising messages as well. Finally, for future research, the role of other moderators or mediators (e.g., past use, product familiarity, or brand loyalty) that can affect the relationship between advertising message and attitudes should be considered in investigations of the matching effect hypothesis.

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APPENDIX A

Questionnaire for Pretest 1
(Product Selection)

Advertising Message Strategy Study
Spring 2005

Thank you for participating in this study of advertising! All of the information you provide will be kept strictly confidential. Only aggregate figures will be used in the analysis, and no individual responses will be used or reported in any way. I appreciate your cooperation, and hope you will enjoy participating.

I would like to begin by asking you questions about products! Please place a checkmark (✓) in the space that most closely represents your opinion of the product purchase process.

1. Gender? Male ____: Female ____

2. Age? _____

3. When purchasing Designer Jeans, the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

4. Have you purchased Designer Jeans? Yes _____: No _____

5. When purchasing Jogging/Running shoes**,** the decision (was/would be)…

	1 2 3 4 5 6 7	
Not logical/objective	____:____:____:____:____:____:____	Logical/objective
Based on non-functional facts	____:____:____:____:____:____:____	Based on functional facts
Based on little feeling	____:____:____:____:____:____:____	Based on lots of feeling
Not an expression of my personality	____:____:____:____:____:____:____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____:____:____:____:____:____:____	Based on looks, taste, touch, smell, or sound
Very unimportant	____:____:____:____:____:____:____	Very important
Little to lose if I choose the wrong brand	____:____:____:____:____:____:____	A lot to lose if I choose the wrong brand
Required little thought	____:____:____:____:____:____:____	Required a lot of thought

6. Have you purchased Jogging/Running Shoes? Yes _____ No _____

7. When purchasing an Expensive Watch ($ 100 +)**,** the decision (was/would be)…

	1 2 3 4 5 6 7	
Not logical/objective	____:____:____:____:____:____:____	Logical/objective
Based on non-functional facts	____:____:____:____:____:____:____	Based on functional facts
Based on little feeling	____:____:____:____:____:____:____	Based on lots of feeling
Not an expression of my personality	____:____:____:____:____:____:____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____:____:____:____:____:____:____	Based on looks, taste, touch, smell, or sound
Very unimportant	____:____:____:____:____:____:____	Very important
Little to lose if I choose the wrong brand	____:____:____:____:____:____:____	A lot to lose if I choose the wrong brand
Required little thought	____:____:____:____:____:____:____	Required a lot of thought

8. Have you purchased an Expensive Watch? Yes _____ No _____

9. When purchasing an Audio Component, the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

10. Have you purchased an Audio Component? Yes _____ No _____

11. When purchasing Music CDs, the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

12. Have you purchased Music CDs? Yes _____ No _____

13. When purchasing a Disposable Camera**,** the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

14. Have you purchased a Disposable Camera? Yes _____ No _____

15. When purchasing a DVD Player**,** the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

16. Have you purchased a DVD Player? Yes _____ No _____

17. When purchasing a Camcorder, the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

18. Have you purchased a Camcorder? Yes _____ No _____

19. When purchasing Video Games, the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

20. Have you purchased Video Games? Yes _____ No _____

21. When purchasing a Cell Phone, the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

22. Have you purchased a Cell Phone? Yes _____ No _____

23. When purchasing Desktop/Laptop Computer, the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

24. Have you purchased Desktop/Laptop Computer? Yes _____ No _____

25. When purchasing Gym/Workout Clothes, the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

26. Have you purchased Gym/Workout Clothes? Yes _____ No _____

27. When purchasing a Digital Camera, the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

28. Have you purchased a Digital Camera? Yes _____ No _____

29. When purchasing a Swim Suit, the decision (was/would be)…

	1 2 3 4 5 6 7	
Not logical/objective	____:____:____:____:____:____:____	Logical/objective
Based on non-functional facts	____:____:____:____:____:____:____	Based on functional facts
Based on little feeling	____:____:____:____:____:____:____	Based on lots of feeling
Not an expression of my personality	____:____:____:____:____:____:____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____:____:____:____:____:____:____	Based on looks, taste, touch, smell, or sound
Very unimportant	____:____:____:____:____:____:____	Very important
Little to lose if I choose the wrong brand	____:____:____:____:____:____:____	A lot to lose if I choose the wrong brand
Required little thought	____:____:____:____:____:____:____	Required a lot of thought

30. Have you purchased a Swim Suit? Yes _____ No _____

31. When purchasing Headache Pain Relievers, the decision (was/would be)…

	1 2 3 4 5 6 7	
Not logical/objective	____:____:____:____:____:____:____	Logical/objective
Based on non-functional facts	____:____:____:____:____:____:____	Based on functional facts
Based on little feeling	____:____:____:____:____:____:____	Based on lots of feeling
Not an expression of my personality	____:____:____:____:____:____:____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____:____:____:____:____:____:____	Based on looks, taste, touch, smell, or sound
Very unimportant	____:____:____:____:____:____:____	Very important
Little to lose if I choose the wrong brand	____:____:____:____:____:____:____	A lot to lose if I choose the wrong brand
Required little thought	____:____:____:____:____:____:____	Required a lot of thought

32. Have you purchased Headache Pain Relievers? Yes _____ No _____

33. When purchasing Auto Insurance**,** the decision (was/would be)…

	1 2 3 4 5 6 7	
Not logical/objective	____:____:____:____:____:____:____	Logical/objective
Based on non-functional facts	____:____:____:____:____:____:____	Based on functional facts
Based on little feeling	____:____:____:____:____:____:____	Based on lots of feeling
Not an expression of my personality	____:____:____:____:____:____:____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____:____:____:____:____:____:____	Based on looks, taste, touch, smell, or sound
Very unimportant	____:____:____:____:____:____:____	Very important
Little to lose if I choose the wrong brand	____:____:____:____:____:____:____	A lot to lose if I choose the wrong brand
Required little thought	____:____:____:____:____:____:____	Required a lot of thought

34. Have you purchased Auto Insurance? Yes _____ No _____

35. When purchasing an MP3 Player**,** the decision (was/would be)…

	1 2 3 4 5 6 7	
Not logical/objective	____:____:____:____:____:____:____	Logical/objective
Based on non-functional facts	____:____:____:____:____:____:____	Based on functional facts
Based on little feeling	____:____:____:____:____:____:____	Based on lots of feeling
Not an expression of my personality	____:____:____:____:____:____:____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____:____:____:____:____:____:____	Based on looks, taste, touch, smell, or sound
Very unimportant	____:____:____:____:____:____:____	Very important
Little to lose if I choose the wrong brand	____:____:____:____:____:____:____	A lot to lose if I choose the wrong brand
Required little thought	____:____:____:____:____:____:____	Required a lot of thought

36. Have you purchased an MP3 Player? Yes _____ No _____

37. When purchasing a Laser Printer**,** the decision (was/would be)…

	1	2	3	4	5	6	7	
Not logical/objective	____	____	____	____	____	____	____	Logical/objective
Based on non-functional facts	____	____	____	____	____	____	____	Based on functional facts
Based on little feeling	____	____	____	____	____	____	____	Based on lots of feeling
Not an expression of my personality	____	____	____	____	____	____	____	An expression of my personality
Not based on looks, taste, touch, smell, or sound	____	____	____	____	____	____	____	Based on looks, taste, touch, smell, or sound
Very unimportant	____	____	____	____	____	____	____	Very important
Little to lose if I choose the wrong brand	____	____	____	____	____	____	____	A lot to lose if I choose the wrong brand
Required little thought	____	____	____	____	____	____	____	Required a lot of thought

38. Have you purchased a Laser Printer? Yes _____ No _____

I appreciate your time and participation.

APPENDIX B

Questionnaire for Pretest 2

(Manipulation check for advertisements)

Advertising Message Strategy Study

Spring 2005

Thank you for participating in this study of advertising! All of the answers you provide will be kept strictly confidential. Only aggregate figures will be used in the analysis, and no individual responses will be used or reported in any way. I appreciate for your cooperation. I hope you will enjoy participating.

Now, I would like to ask you some questions about advertisement! After looking at each advertisement, please place a checkmark (✓) in the space that most closely represents how you think and feel the ad is.

For example.

If you think (or feel) that the advertising you just saw is very closely related to one end of the scale, you should place your check mark as follows:

Not logical ___:___:___:___:___:___:_✓_ Logical

or

Not attractive _✓_:___:___:___:___:___:___ Attractive

The first advertisement

1. On the rating scales below, place a check mark (✓) in the space that best describes your opinion about the advertisement you just saw.

PLESAE DO NOT TURN THE PAGE BACK TO THE AD

The advertisement, which I just saw, is…

	1 : 2 : 3 : 4 : 5 : 6 : 7	
Not logical	____:____:____:____:____:____:____	Logical
Not educational	____:____:____:____:____:____:____	Educational
Not informative	____:____:____:____:____:____:____	Informative
Not factual	____:____:____:____:____:____:____	Factual
Not useful	____:____:____:____:____:____:____	Useful
Not attractive	____:____:____:____:____:____:____	Attractive
Not desirable	____:____:____:____:____:____:____	Desirable
Not arousing	____:____:____:____:____:____:____	Arousing
Not beautiful	____:____:____:____:____:____:____	Beautiful
Mostly informational	____:____:____:____:____:____:____	Mostly emotional
Makes me dislike this product	____:____:____:____:____:____:____	Makes me like this product
The brand is unfamiliar to me	____:____:____:____:____:____:____	The brand is familiar to me

STOP

Do not turn the page
Please wait for instructions

The second advertisement

2. On the rating scales below, place a check mark (✓) in the space that best describes your opinion about the advertisement you just saw.

PLESAE DO NOT TURN THE PAGE BACK TO THE AD

The advertisement, which I just saw, is…

	1 2 3 4 5 6 7	
Not logical	____:____:____:____:____:____:____	Logical
Not educational	____:____:____:____:____:____:____	Educational
Not informative	____:____:____:____:____:____:____	Informative
Not factual	____:____:____:____:____:____:____	Factual
Not useful	____:____:____:____:____:____:____	Useful
Not attractive	____:____:____:____:____:____:____	Attractive
Not desirable	____:____:____:____:____:____:____	Desirable
Not arousing	____:____:____:____:____:____:____	Arousing
Not beautiful	____:____:____:____:____:____:____	Beautiful
Mostly infomational	____:____:____:____:____:____:____	Mostly emotional
Makes me dislike this product	____:____:____:____:____:____:____	Makes me like this product
The brand is unfamiliar to me	____:____:____:____:____:____:____	The brand is familiar to me

STOP

Do not turn the page
Please wait for instructions

The third advertisement

3. On the rating scales below, place a check mark (✓) in the space that best describes your opinion about the advertisement you just saw.

PLESAE DO NOT TURN THE PAGE BACK TO THE AD

The advertisement, which I just saw, is…

	1 : 2 : 3 : 4 : 5 : 6 : 7	
Not logical	____:____:____:____:____:____:____	Logical
Not educational	____:____:____:____:____:____:____	Educational
Not informative	____:____:____:____:____:____:____	Informative
Not factual	____:____:____:____:____:____:____	Factual
Not useful	____:____:____:____:____:____:____	Useful
Not attractive	____:____:____:____:____:____:____	Attractive
Not desirable	____:____:____:____:____:____:____	Desirable
Not arousing	____:____:____:____:____:____:____	Arousing
Not beautiful	____:____:____:____:____:____:____	Beautiful
Mostly informational	____:____:____:____:____:____:____	Mostly emotional
Makes me dislike this product	____:____:____:____:____:____:____	Makes me like this product
The brand is unfamiliar to me	____:____:____:____:____:____:____	The brand is familiar to me

Age? _____

Gender? Male _____ Female _____

Thank you very much for your time and participation.

APPENDIX C

Questionnaire for Main Experiment

❖ Now, I would like to ask you some general questions about you! Please place a checkmark (✓) in the space that most closely represents how you rate yourself on each of these questions.

(For example) I would prefer complex to simple problems.

Strongly disagree ___:___:___:___:___:___:___:___:_✓_ Strongly agree

or

Strongly disagree ___:___:_✓_:___:___:___:___:___:___ Strongly agree

	Strongly Disagree								**Strongly Agree**
I would prefer complex to simple problems	1	2	3	4	5	6	7	8	9
I like to have the responsibility of handling a situation that requires a lot of thinking	1	2	3	4	5	6	7	8	9
Thinking is not my idea of fun	1	2	3	4	5	6	7	8	9
I would rather do something that requires little thought than something that is sure to challenge my thinking abilities	1	2	3	4	5	6	7	8	9
I try to anticipate and avoid situations where there is likely chance I will have to think in depth about something	1	2	3	4	5	6	7	8	9
I find satisfaction in deliberating hard and for long hours	1	2	3	4	5	6	7	8	9
I only think as hard as I have to	1	2	3	4	5	6	7	8	9
I prefer to think about small, daily projects to long-term ones	1	2	3	4	5	6	7	8	9
I like tasks that require little thought once I've learned them	1	2	3	4	5	6	7	8	9
The idea of relying on thought to make my way to the top appeals to me	1	2	3	4	5	6	7	8	9
I really enjoy a task that involves coming up with new solutions to problems	1	2	3	4	5	6	7	8	9
Learning new ways to think doesn't excite me very much	1	2	3	4	5	6	7	8	9
I prefer my life to be filled with puzzles that I must solve	1	2	3	4	5	6	7	8	9
The notion of thinking abstractly is appealing to me	1	2	3	4	5	6	7	8	9

	Strongly Disagree								Strongly Agree
I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.	1	2	3	4	5	6	7	8	9
I feel relief rather than satisfaction after completing a task that required a lot of mental effort	1	2	3	4	5	6	7	8	9
It's enough for me that something gets the job done; I don't care how or why it works	1	2	3	4	5	6	7	8	9
I usually end up deliberating about issues even when they do not affect me personally	1	2	3	4	5	6	7	8	9
I'm good at empathizing with other people's problems	1	2	3	4	5	6	7	8	9
I make decisions with my heart	1	2	3	4	5	6	7	8	9
I often get too emotionally involved	1	2	3	4	5	6	7	8	9
I appreciate opportunities to discover my true feelings	1	2	3	4	5	6	7	8	9
I like being around sensitive people	1	2	3	4	5	6	7	8	9
My feelings reflect who I am	1	2	3	4	5	6	7	8	9
I am a feeling person	1	2	3	4	5	6	7	8	9
I'm more of a "feeler" than a "thinker"	1	2	3	4	5	6	7	8	9
When I recall a situation, I usually recall the emotional aspects of the situation	1	2	3	4	5	6	7	8	9
I prefer a task that is emotional and important to a task that is intellectual and important	1	2	3	4	5	6	7	8	9
Feeling comes naturally to me	1	2	3	4	5	6	7	8	9
I enjoy truing to explain my feelings--even if it's only to myself	1	2	3	4	5	6	7	8	9
Emotion excites me	1	2	3	4	5	6	7	8	9

STOP

Do not turn the page.

Please wait for instructions.

The first advertisement

On the rating scales below, place a check mark (✓) in the space that best describes your opinion about the advertisement you just saw.

For example. If you think that the advertisement you just saw is very closely related to one end of the scale, you should place your check mark as follows:

Bad ___:___:___:___:___:___:_✓_ Good

or

Pleasant _✓_:___:___:___:___:___:___ Unpleasant

PLESAE DO NOT TURN THE PAGE BACK TO THE AD

The advertisement you just saw…

	1	2	3	4	5	6	7	
Bad	____	____	____	____	____	____	____	Good
Favorable	____	____	____	____	____	____	____	Unfavorable
Unpleasant	____	____	____	____	____	____	____	Pleasant

The brand advertised you just saw…

Bad	____	____	____	____	____	____	____	Good
Satisfactory	____	____	____	____	____	____	____	Unsatisfactory
Unfavorable	____	____	____	____	____	____	____	Favorable

How likely are you to purchase the brand you just saw…

Unlikely	____	____	____	____	____	____	____	Likely
Probable	____	____	____	____	____	____	____	Improbable
Impossible	____	____	____	____	____	____	____	Possible

PLESAE <u>DO NOT</u> TURN THE PAGE BACK TO THE AD

<u>The advertisement you just saw ...</u>

	1	2	3	4	5	6	7	8	
Ugly	____:	____:	____:	____:	____:	____:	____:	____	Beautiful
Unpleasant	____:	____:	____:	____:	____:	____:	____:	____	Pleasant
Harsh	____:	____:	____:	____:	____:	____:	____:	____	Gentle
Appealing	____:	____:	____:	____:	____:	____:	____:	____	Unappealing
Attractive	____:	____:	____:	____:	____:	____:	____:	____	Unattractive
In poor taste	____:	____:	____:	____:	____:	____:	____:	____	In good taste
Unexciting	____:	____:	____:	____:	____:	____:	____:	____	Exciting
Uninteresting	____:	____:	____:	____:	____:	____:	____:	____	Interesting
Worth looking at	____:	____:	____:	____:	____:	____:	____:	____	Not worth looking at
Comforting	____:	____:	____:	____:	____:	____:	____:	____	Frightening
Colorless	____:	____:	____:	____:	____:	____:	____:	____	Colorful
Boring	____:	____:	____:	____:	____:	____:	____:	____	Fascinating
Meaningless	____:	____:	____:	____:	____:	____:	____:	____	Meaningful
Convincing	____:	____:	____:	____:	____:	____:	____:	____	Unconvincing
Important to me	____:	____:	____:	____:	____:	____:	____:	____	Unimportant to me
Weak	____:	____:	____:	____:	____:	____:	____:	____	Strong
Dishonest	____:	____:	____:	____:	____:	____:	____:	____	Honest
Hard to remember	____:	____:	____:	____:	____:	____:	____:	____	Easy to remember
Easy to understand	____:	____:	____:	____:	____:	____:	____:	____	Hard to understand
Worth remembering	____:	____:	____:	____:	____:	____:	____:	____	Not worth remembering
Complicated	____:	____:	____:	____:	____:	____:	____:	____	Simple
Ordinary	____:	____:	____:	____:	____:	____:	____:	____	New
Stale	____:	____:	____:	____:	____:	____:	____:	____	Fresh
Lively	____:	____:	____:	____:	____:	____:	____:	____	Lifeless
Sharp	____:	____:	____:	____:	____:	____:	____:	____	Washed out

PLESAE <u>DO NOT</u> TURN THE PAGE BACK TO THE AD

- What is the name of the advertised **<u>brand</u>** you just saw?

_____ **( ) Don't know**

- Please write down all the **<u>thoughts and feeling</u>** you had when you were looking at the ad

STOP

<u>Do not</u> turn the page.
Please wait for instructions.

The second advertisement

On the rating scales below, place a check mark (✓) in the space that best describes your opinion about the advertisement you just saw.

For example. If you think that the advertisement you just saw is very closely related to one end of the scale, you should place your check mark as follows:

Bad ___:___:___:___:___:___:_✓_ Good

or

Pleasant _✓_:___:___:___:___:___:___ Unpleasant

PLESAE DO NOT TURN THE PAGE BACK TO THE AD

The advertisement you just saw…

	1	2	3	4	5	6	7	
Bad	____:	____:	____:	____:	____:	____:	____	Good
Favorable	____:	____:	____:	____:	____:	____:	____	Unfavorable
Unpleasant	____:	____:	____:	____:	____:	____:	____	Pleasant

The brand advertised you just saw…

Bad	____:	____:	____:	____:	____:	____:	____	Good
Satisfactory	____:	____:	____:	____:	____:	____:	____	Unsatisfactory
Unfavorable	____:	____:	____:	____:	____:	____:	____	Favorable

How likely are you to purchase the brand you just saw…

Unlikely	____:	____:	____:	____:	____:	____:	____	Likely
Probable	____:	____:	____:	____:	____:	____:	____	Improbable
Impossible	____:	____:	____:	____:	____:	____:	____	Possible

PLESAE <u>DO NOT</u> TURN THE PAGE BACK TO THE AD

<u>The advertisement you just saw...</u>

	1	2	3	4	5	6	7	8	
Ugly	____	____	____	____	____	____	____	____	Beautiful
Unpleasant	____	____	____	____	____	____	____	____	Pleasant
Harsh	____	____	____	____	____	____	____	____	Gentle
Appealing	____	____	____	____	____	____	____	____	Unappealing
Attractive	____	____	____	____	____	____	____	____	Unattractive
In poor taste	____	____	____	____	____	____	____	____	In good taste
Unexciting	____	____	____	____	____	____	____	____	Exciting
Uninteresting	____	____	____	____	____	____	____	____	Interesting
Worth looking at	____	____	____	____	____	____	____	____	Not worth looking at
Comforting	____	____	____	____	____	____	____	____	Frightening
Colorless	____	____	____	____	____	____	____	____	Colorful
Boring	____	____	____	____	____	____	____	____	Fascinating
Meaningless	____	____	____	____	____	____	____	____	Meaningful
Convincing	____	____	____	____	____	____	____	____	Unconvincing
Important to me	____	____	____	____	____	____	____	____	Unimportant to me
Weak	____	____	____	____	____	____	____	____	Strong
Dishonest	____	____	____	____	____	____	____	____	Honest
Hard to remember	____	____	____	____	____	____	____	____	Easy to remember
Easy to understand	____	____	____	____	____	____	____	____	Hard to understand
Worth remembering	____	____	____	____	____	____	____	____	Not worth remembering
Complicated	____	____	____	____	____	____	____	____	Simple
Ordinary	____	____	____	____	____	____	____	____	New
Stale	____	____	____	____	____	____	____	____	Fresh
Lively	____	____	____	____	____	____	____	____	Lifeless
Sharp	____	____	____	____	____	____	____	____	Washed out

PLESAE <u>DO NOT</u> TURN THE PAGE BACK TO THE AD

- What is the name of the advertised **<u>brand</u>** you just saw?

_____ **( ) Don't know**

- Please write down all the **<u>thoughts and feeling</u>** you had when you were looking at the ad

_____

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_____

STOP

<u>Do not</u> turn the page.
Please wait for instructions.

The third advertisement

On the rating scales below, place a check mark (✓) in the space that best describes your opinion about the advertisement you just saw.

For example. If you think that the advertisement you just saw is very closely related to one end of the scale, you should place your check mark as follows:

Bad ___:___:___:___:___:___:_✓_ Good

or

Pleasant _✓_:___:___:___:___:___:___ Unpleasant

PLESAE DO NOT TURN THE PAGE BACK TO THE AD

The advertisement you just saw…

	1	2	3	4	5	6	7	
Bad	____	____	____	____	____	____	____	Good
Favorable	____	____	____	____	____	____	____	Unfavorable
Unpleasant	____	____	____	____	____	____	____	Pleasant

The brand advertised you just saw…

Bad	____	____	____	____	____	____	____	Good
Satisfactory	____	____	____	____	____	____	____	Unsatisfactory
Unfavorable	____	____	____	____	____	____	____	Favorable

How likely are you to purchase the brand you just saw…

Unlikely	____	____	____	____	____	____	____	Likely
Probable	____	____	____	____	____	____	____	Improbable
Impossible	____	____	____	____	____	____	____	Possible

PLESAE <u>DO NOT</u> TURN THE PAGE BACK TO THE AD

<u>The advertisement you just saw ...</u>

	1	2	3	4	5	6	7	8	
Ugly	____:	____:	____:	____:	____:	____:	____:	____	Beautiful
Unpleasant	____:	____:	____:	____:	____:	____:	____:	____	Pleasant
Harsh	____:	____:	____:	____:	____:	____:	____:	____	Gentle
Appealing	____:	____:	____:	____:	____:	____:	____:	____	Unappealing
Attractive	____:	____:	____:	____:	____:	____:	____:	____	Unattractive
In poor taste	____:	____:	____:	____:	____:	____:	____:	____	In good taste
Unexciting	____:	____:	____:	____:	____:	____:	____:	____	Exciting
Uninteresting	____:	____:	____:	____:	____:	____:	____:	____	Interesting
Worth looking at	____:	____:	____:	____:	____:	____:	____:	____	Not worth looking at
Comforting	____:	____:	____:	____:	____:	____:	____:	____	Frightening
Colorless	____:	____:	____:	____:	____:	____:	____:	____	Colorful
Boring	____:	____:	____:	____:	____:	____:	____:	____	Fascinating
Meaningless	____:	____:	____:	____:	____:	____:	____:	____	Meaningful
Convincing	____:	____:	____:	____:	____:	____:	____:	____	Unconvincing
Important to me	____:	____:	____:	____:	____:	____:	____:	____	Unimportant to me
Weak	____:	____:	____:	____:	____:	____:	____:	____	Strong
Dishonest	____:	____:	____:	____:	____:	____:	____:	____	Honest
Hard to remember	____:	____:	____:	____:	____:	____:	____:	____	Easy to remember
Easy to understand	____:	____:	____:	____:	____:	____:	____:	____	Hard to understand
Worth remembering	____:	____:	____:	____:	____:	____:	____:	____	Not worth remembering
Complicated	____:	____:	____:	____:	____:	____:	____:	____	Simple
Ordinary	____:	____:	____:	____:	____:	____:	____:	____	New
Stale	____:	____:	____:	____:	____:	____:	____:	____	Fresh
Lively	____:	____:	____:	____:	____:	____:	____:	____	Lifeless
Sharp	____:	____:	____:	____:	____:	____:	____:	____	Washed out

PLESAE DO NOT TURN THE PAGE BACK TO THE AD

- What is the name of the advertised **brand** you just saw?

_____ **( ) Don't know**

- Please write down all the **thoughts and feeling** you had when you were looking at the ad

_____

_____

_____

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_____

_____

- Age _____
- Gender _____
- Major _____

Finished.

Thank you very much for your time and participation.

APPENDIX D:

Advertisements (Stimulus Materials)

1. Think Product (Pion, Laser Printer)
    - Informational ad
    - Transformational ad
    - Dual ad
2. Combination Product (Empas, MP3 Player)
    - Informational ad
    - Transformational ad
    - Dual ad
3. Feel Product (Freener, Swimsuit)
    - Informational ad
    - Transformational ad
    - Dual ad

1. Informational Ad for Laser Printer (Think Product)

Seamless Communications

PION Laser
PL 9400e

PION MAKES IT HAPPEN

It's fast. It's colorful. It's cost-effective

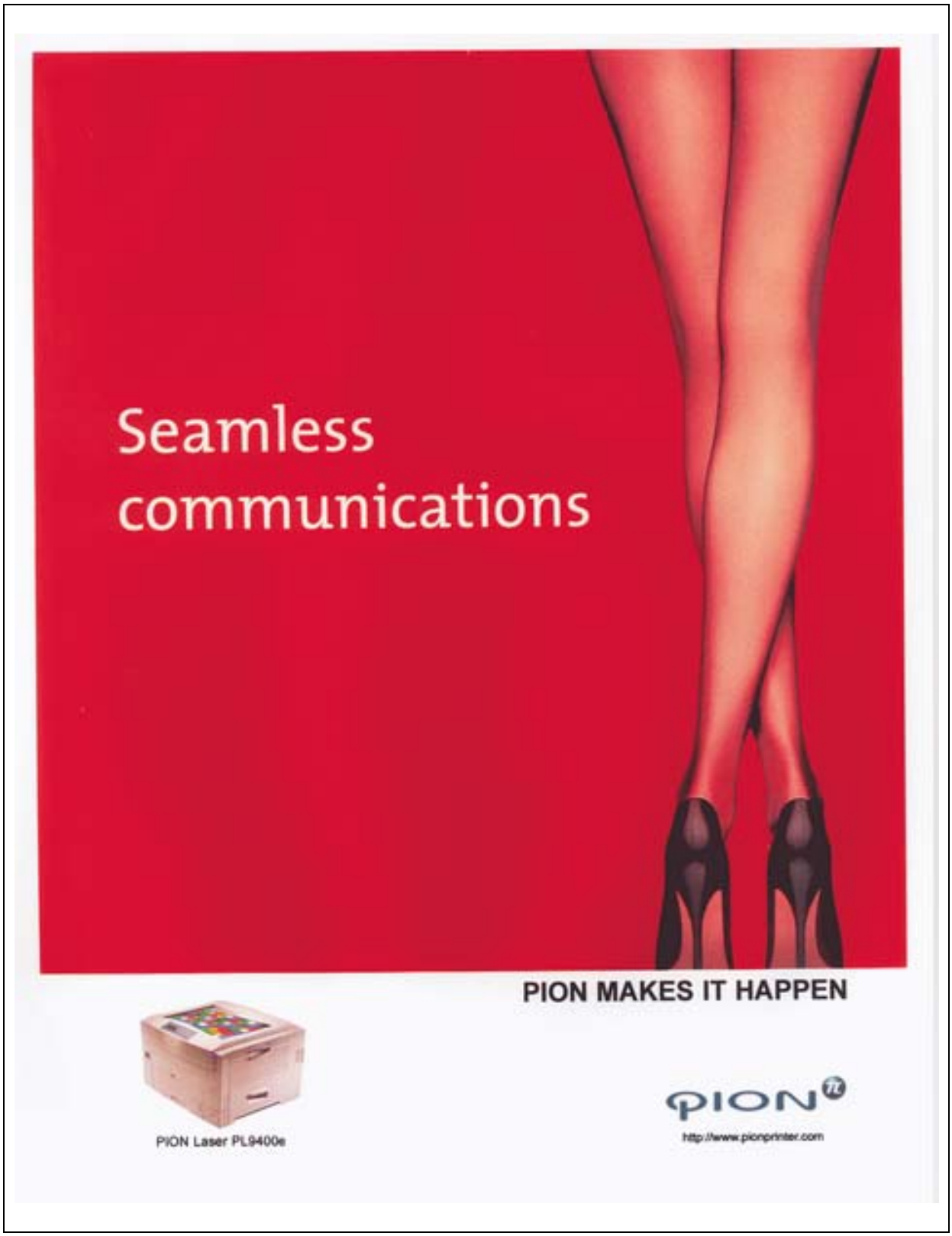
With the new PION Color Laser 9400, now color is possible with the same speed, ease, and affordability you've come to expect from black-only printing. PION's ImageREt2400 layering technology and 600x600 resolution ensure smoother color, sharper images and crisper text.

Print Speed (Black/Color): up to 12 ppm
Print Quality (Black/Color): true 600x600 dpi with PION Image REt 2400
Monthly Volume: 45,000 pages per month
Paper Trays: up to 3 input trays, 2 standard
Paper Input Capacity: up to 850 sheets, 350 sheets standard

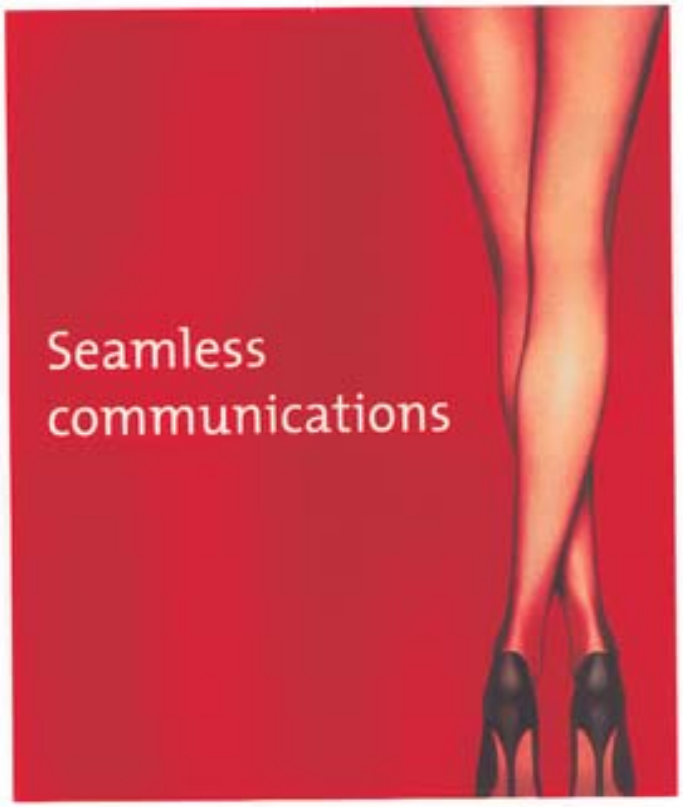
PION

http://www.pionprinter.com

2. Transformational Ad for Laser Printer (Think Product)



3. Dual Ad for Laser Printer (Think Product)



PION MAKES IT HAPPEN

It's fast. It's colorful. It's cost-effective

PION Laser PL9400e

With the new PION Color Laser 9400, now color is possible with the same speed, ease, and affordability you've come to expect from black-only printing. PION's imageREt 2400 layering technology and 600X600 solution ensure smoother color, sharper images and crisper text.

Monthly volume: 45,000 pages per month
Paper tray: up to 3 input trays, 2 standard
Paper input capacity: up to 850 sheets, 350 sheets standard

PION

http://www.pionprinter.com

4. Informational Ad for MP3 Player (Combination Product)

LET THE SOUND TAKE YOU OVER

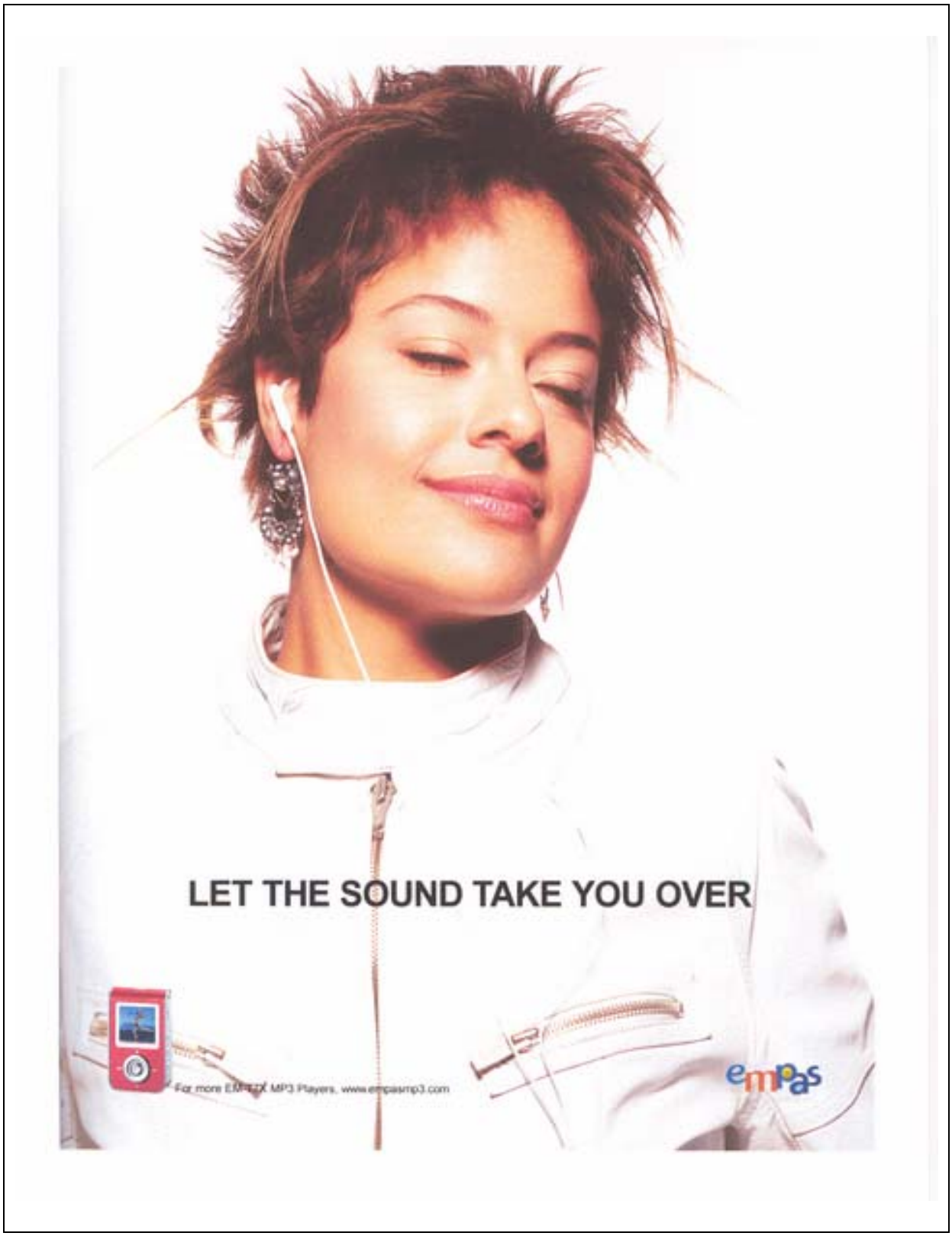
This sleek and compact digital music player holds up to 250 of your favorite songs. Plus you can transfer and store digital pictures and view them on the vivid color display. It also features a rechargeable battery that lasts up to 10 hours, enhanced 3D sound, ultra-fast USB 2.0 file transfers, and simple navigation. It's one of the first players to be fully compliant with Microsoft's Windows Media Player 10 secure music format that is used by such online music servies as Napster.

CSTN Color LCD (65K Color)	Flash Storage Device
JPEG Image & Text Viewer	FM Tuner & Recorder
Clock Function (Alarm, Programmed FM Rec.)	10 Hr. Built-In Li-Polymer Battery
512MB Real Time Equalizer Display	Voice Recording
MP3, WMA, Secure WMA, ASF, JPEG	Magnesium & Aluminum Body Blue / 512MB

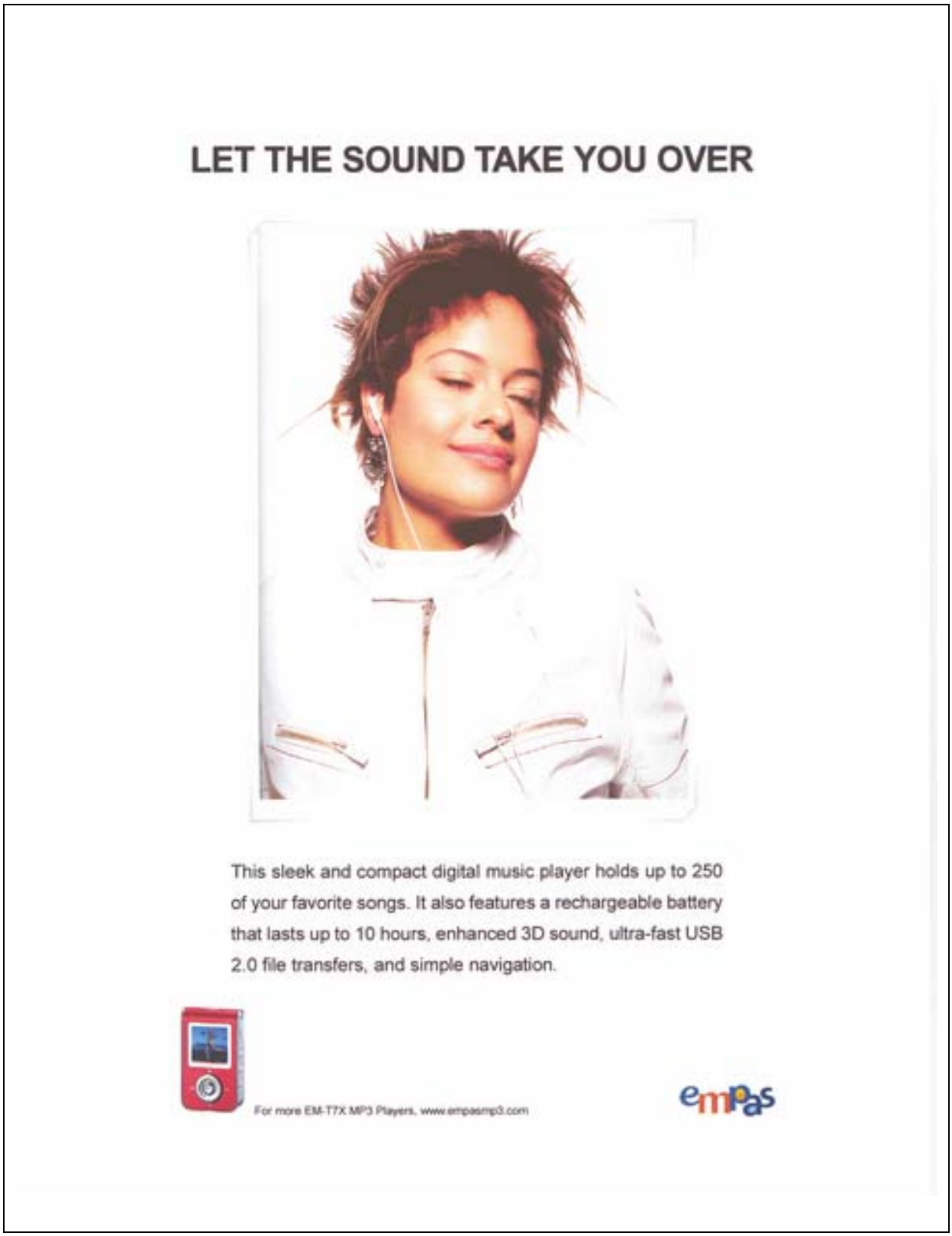
For more EM-T7X MP3 Players, www.empaamp3.com

empas

5. Transformational Ad for MP3 Player (Combination Product)



6. Dual Ad for MP3 Player (Combination Product)



7. Informational Ad for Swimsuit (Feel Product)

Color at its believable, beautiful best

FreeneR Swimsuit

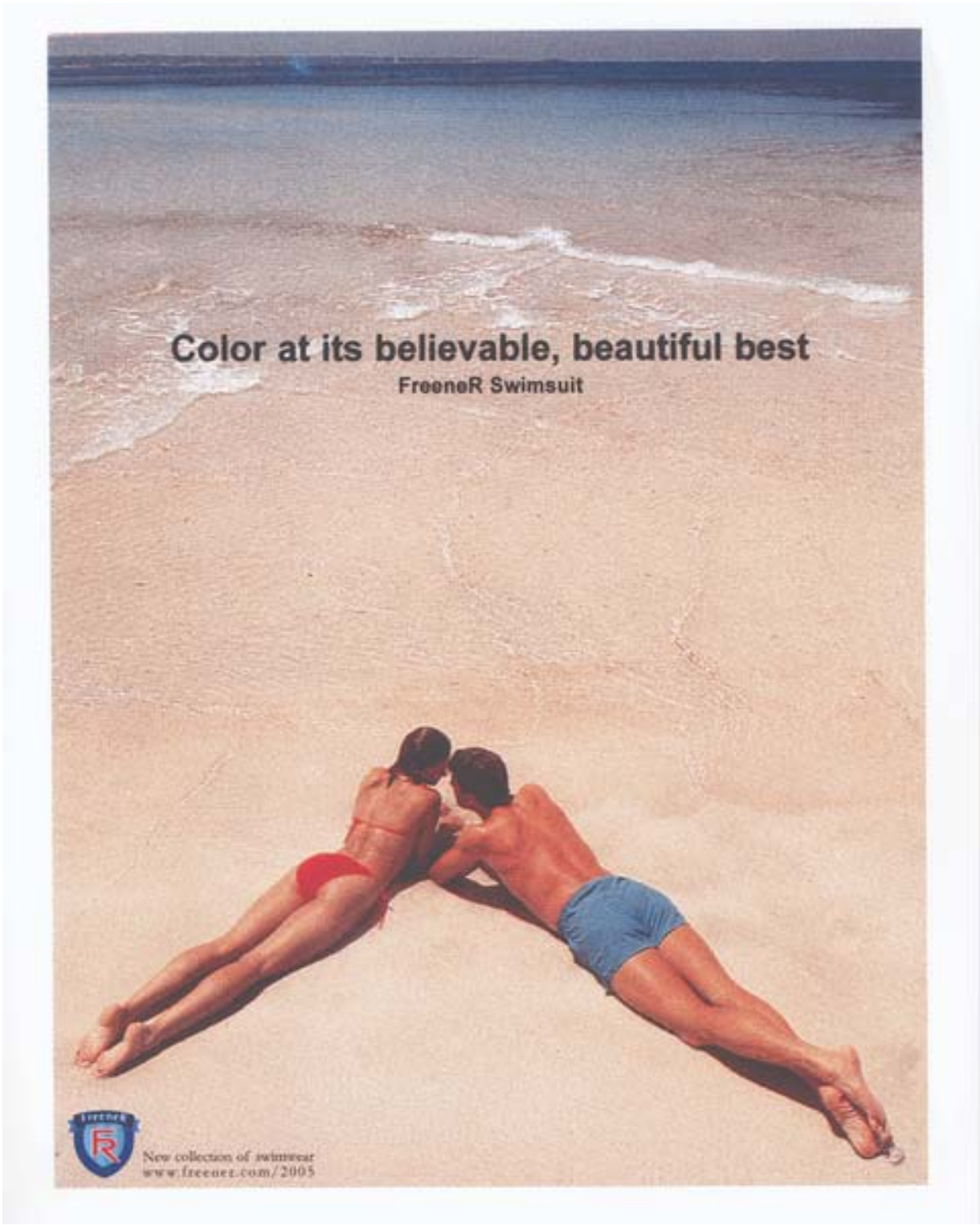
In this season, FreeneR's wide color spectrum and combinations are greater than ever. For superior color resistance and support, FreeneR swimsuits are made with Splendertex fabric, which provides:

20 times more color resistant than conventional swimsuit
Softer feel and superior shape retention
Low moisture absorption and quick drying
Chlorine resistant fabric-no fabric degradation
A unique blend of 60% polyester and 40% PBT

Splendertex® is polyester-lycra based fabric. Polyester is hydrophobic, thereby when it is dyed, only the color of the dye dissolves into the fabric, making the dye permanent. Nylon is not able to repel water causes the fabric to swell and ultimately weakens the molecular structure. The dyestuffs used on nylon tend to oxidize, a reaction which is catalyzed by light. The microscopic effects range from color fading to complete degradation of the polymer matrix. This is why the colors fade in nylon-lycra swimsuits over time, but do not fade in polyester-lycra swimsuits.

New collection of swimwear
www.freener.com/2005

8. Transformational Ad for Swimsuit (Feel Product)



9. Dual Ad for Swimsuit (Feel Product)

Color at its believable, beautiful best

FreeneR Swimsuit

In this season, our wide color spectrum and combinations are greater than ever. For superior color resistance and support, FreeneR swimsuits are made with Splendertex fabric, which provides:

20 times more color resistant than conventional swimsuit
Softer feel and superior shape retention
Low moisture absorption and quick drying
Chlorine resistant fabric-no fabric degradation
A unique blend of 60% polyester and 40% PBT

New collection of swimwear
www.freener.com/2005