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AN EMPIRICAL INVESTIGATION OF THE RELATIONSHIP BETWEEN ATTITUDES TOWARD ADVERTISEMENTS AND ATTITUDES TOWARD BRANDS OVER TIME

By

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ABSTRACT

AN EMPIRICAL INVESTIGATION OF THE RELATIONSHIP BETWEEN ATTITUDES TOWARD ADVERTISEMENTS AND ATTITUDES TOWARD BRANDS OVER TIME

By

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This dissertation examines the relationship between attitudes toward advertisements and attitudes toward brands. The literature indicates that both brand familiarity and attitudes toward advertisements are important in explaining the changes in attitudes toward brands over time. It also indicates that the intensity of an advertisement has a significant effect on brand name familiarity.

An experiment was conducted over 10 days. A 5 x 3 between subject design included five levels of advertisement (from very negative to very positive) and three different times of measurement (immediately after the ad exposure, 4 days later, and 10 days later).

The findings suggest that there may be an "intensity-valence effect," indicating that as the intensity of an advertisement (I_{ad}) increases, the brand familiarity (BF) and the intensity of the attitude toward the brand (IA_{ad}) increase at a diminishing rate. It was also found that

negative advertisements tended to have stronger "intensity-valence effects." It was also confirmed that there is a positive relationship between the attitude toward the advertisement (A_{ad}) and the attitude toward the brand (A_b). Unexpectedly, however, there is no evidence to indicate a positive relationship between brand familiarity (BF) and attitude toward the brand (A_b). Instead, a positive relationship between BF and purchase intention (PI) seems to exist. Therefore, an affective information processing model is proposed. The model explains that the "intensity-valence effect" affects the positive relationship between the level of advertisement (L_{ad}) and A_{ad}, and between L_{ad} and BF; there is a positive relationship between A_{ad} and A_b; A_b and BF together provide positive relationships with PI. All of the relationships tend to persist for a period of time (four days in this experiment) then start decreasing quickly. The decrease in the magnitude of the relationships do not seem to be linear. These findings provide managerial implications and have implications for future research.

To my parents

who

nurture endless love and support

for their children

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CHAPTER ONE

INTRODUCTION

Two main research streams have emerged in the study of information processing. First the cognitive approach and more recently the affective approach have both contributed to our understanding of how consumers process information to form attitudes.

The affective approach is so labeled because of the roles of emotion and the route through which affective information is processed. Studies, in the area, had their focus on constructs such as affective response, emotions, mood, and attitude toward the advertisement.

Various theories have been applied and diverse hypotheses have been developed by researchers attempting to understand how attitudes toward advertisements (A_{ad}) in general can be associated with attitudes toward a particular brand (A_b). Although the empirical research in the area is voluminous, research shows little consensus on the relationship between the two information processing constructs. Further, most of the studies have been based on the static time frame, thus little is known about the relationship between A_{ad} and A_b over a period of time.

Because most of the consumer purchases occur sometime after being exposed to advertisements, a longitudinal perspective is appropriate.

Purpose of Study and Research Issues

The overall purpose of this study is to understand how advertisement information is processed through A_{ad} and to investigate the relationship between A_{ad} and A_b over time. The literature contains several possible theories that might explain the relationship, however, none as yet explicitly explains how a negative advertisement can be effective over time, a phenomenon often witnessed in advertising strategy implementation. Several constructs must be added to explore this relationship. In turn these can be used in the context of a general model in an effort to explain the relationships between the A_{ad} and A_b over time.

Plan of the Dissertation

Chapter Two begins with a literature review for the conceptual framework. Then the static and dynamic points of view are discussed. Finally, other relevant theories are reviewed. Chapter Three discusses hypotheses and the methodology used to test the hypotheses. Chapter Four reports the data analysis and Chapter Five provides

discussion and conclusions.

CHAPTER TWO

LITERATURE REVIEW AND HYPOTHESES

This chapter, divided into six sections, begins with a review of a conceptual framework of consumer information processing. The second section gives an overview of theoretical perspectives on the static aspects of the relationship between A_{ad} and A_b. The third section reviews the dynamic relationship between A_{ad} and Ab. The fourth section covers the interactions between affect and other relevant theoretical constructs. In particular, attention, the degree of processing, and memory are discussed relative to affect.

Conceptual Framework

The role of affective/emotional response to advertising has been studied in the context of consumers' attitudes toward advertisements (A_{ad}). Several studies indicate that the attitudes toward brands (A_b) can be influenced by ad attitudes as well as beliefs about product attributes.

Mitchell and Olson (1981) found that A_b and A_{act} (attitude toward act of purchasing) can be explained better

by both belief structure and A_{ad} than by belief structure alone. They also found that A_{ad} mediates advertising effects on brand attitudes.

Petty and Cacioppo (1981) developed the Elaboration Likelihood Model (ELM) that posits the central and the peripheral routes to attitude change. According to their model, the central route is used when elaboration likelihood is high, while the peripheral route is employed when peripheral cues are instrumental. As such, the central route views attitude change as the result of a person's diligent consideration of attributes, while the peripheral route views attitude formation or change by associating the attitude object with positive or negative cues. Active processing of the message is done through the central route, and processing of the characteristics of the message is done through the peripheral processing route. Petty, Cacioppo, and Schumann (1983) extended the ELM model. They showed that high involvement subjects are more likely to form their attitudes through the central route, while low involvement subjects are more likely to form their attitudes through the peripheral route. Lutz, MacKenzie, and Belch (1983) also postulated that the effect of A_{ad} on A_b would be stronger for peripheral processing because under that condition the consumer does not process the message actively.

MacKenzie and Lutz (1983) evaluated four possible

causal relationships among A_{ad}, C_b, A_b, and purchase intentions. They concluded that a one-way causal flow from A_{ad} to A_b is superior to the other models although all four of the proposed models are significant explanations of the data. The strongest support was for causal flow from A_{ad} to C_b and from A_{ad} to A_b. Weaker support was found for dual causal flow between A_{ad} and A_b. A replication of the study by MacKenzie, Lutz, and Belch (1986), however, shows different results. That study found that Dual Mediation Hypothesis (DMH) model (causal flow from A_{ad} to C_b as well as from A_{ad} to A_b) appeared to fit the data significantly better than the other models.

Park and Young (1983, 1986) suggested that type and level of involvement (cognitive, affective, and low involvement) appear to moderate the effect of A_{ad} and C_b on brand attitude. Their research suggested that cognitive involvement would lead to a stronger effect of brand cognition than the effect of A_{ad} on A_b. They also indicated that affective involvement and low involvement conditions would lead to stronger effect of A_{ad} on A_b than the effect of brand cognition on A_b.

Gardner (1985a) reviewed studies on the effects of A_{ad} on A_b. She found that A_{ad} affects A_b to an approximately equal extent under both consumer information processing sets -- brand evaluation set (evaluation of the advertised brand) and nonbrand set conditions (enjoyment or evaluation of the

advertisement for its own sake). She also noted that brand related beliefs are more significant mediators for brand attitudes under a brand evaluation set condition than under a nonbrand set condition.

Regarding affective responses (ARs), Batra and Ray (1985, 1986) confirmed that affective responses represent strong mediating influences on brand attitudes and affective responses appear to be antecedents of the A_{ad} to have impact on A_{ad}. They, therefore, suggested the relevant chain of effect is affective responses (ARs) --> A_{ad} --> A_b --> PI.

A study by Lee (1987) indicated that, in addition to thoughts (cognitive responses), feelings (affective responses) are useful for the study of consumer's response to advertisements. He manipulated the number of advertisement repetitions and concluded that high involvement consumers tend to process information more cognitively and low involvement consumers tend to process information more affectively at any level of ad repetitions.

Building on the notion that the source of affect toward the brand may be different in high and low involvement situations, Batra and Ray (1985) proposed the percentage contribution model. Their model posits that ad execution-based on a hedonic component should be the major contributor to purchase intentions in low involvement situations; the attribute-based utilitarian attitude component is important in high involvement situations. Additionally, the model

indicates that brand familiarity should be significantly greater in low involvement situations than in high involvement situations. Batra and Ray (1985) suggested that brand attitudes result from two sources of affect and are, in turn, mediated by different responses. Using LISREL-V, they found no support for the contribution model. In high involvement situations, the attribute sensitive component did have a significant causal effect on purchase intentions while the ad execution sensitive component had no effect. In low involvement situations the ad execution sensitive component had a stronger causal influence on purchase intentions than the attribute sensitive component. The result, however, was not statistically significant. They also found that familiarity is the major determinant of purchase intentions in low involvement situations and that it works more through the ad-execution-sensitive component than the attribute-sensitive component. Finally, they proposed a model that suggests (a) in high message response involvement, cognitive processing evoked by message argumentation leads to changes in attribute argumentation sensitive attitudes; (b) in low message response conditions, the execution sensitive attitudes are led by execution likability and exposure frequency. In addition, brand familiarity influences purchase intentions directly in low message response conditions. Later, Batra (1986) made a note that this hypothetical model requires empirical

verification. Additionally, he said that the model ignores the A_{ad} construct and that if included A_{ad} would be affected by both attribute and affective processing, which in turn would influence both attitude components. Regarding familiarity, Batra argued that "the liking phase of the mere exposure effect is not due to conscious (recall-evidenced) learning but to some kind of preattentive recognition."

Overview of Major Theoretical Perspectives on the Static Aspects of the Relationship between A_{ad} and A_b

Several studies have attempted to explain the influence of A_{ad} and A_b. Most support a positive relationship between A_{ad} and A_b. There is, however, a seemingly contradictory belief about this positive relationship. Both marketing practice and academic literature suggest that disliked advertisements can be effective and the negative A_{ad} is, in fact, more effective than neutral A_{ad}.

Do these two arguments contradict each other? If so, how can the relationship between A_{ad} and A_b be explained? When a negative A_{ad} is formed, should one expect a negative or positive A_b response? In order to answer these questions, several possible theoretical perspectives need to be synthesized.

One of the early researchers in the area, Shimp (1981) categorized nine theoretical combinations between A_{ad} and A_b.

He divided both A_{ad} and A_b into three categories (positive, neutral, and negative) and produced Figure 1, which presents a good overview of possible relationships. It seems that the argument, which supports positive relationship, explains the cells 1 (++) and 9 (--) in Figure 1. The other argument, which indicates a negative A_{ad} can be effective, explains cell 7 (-+). In a sense, both arguments are too myopic to represent a general explanation. However, with the inclusion of time, the two approaches can be integrated into a general explanation. Because most consumer purchasings occur some time after exposure to advertisements, time is an important variable.

Figure 1

Nine theoretical combinations between A_{ad} and A_b

		A_b +	A_b 0	A_b -
A_{ad}	+	1 (+, +)	2 (+, 0)	3 (+, -)
	0	4 (0, +)	5 (0, 0)	6 (0, -)
	-	7 (-, +)	8 (-, 0)	9 (-, -)

In this section, for an overview, theoretical explanations on the static aspects of the relationship between A_{ad} and A_b are reviewed. The static explanations will be extended into dynamic views in the following section. The theoretical perspectives, (a) Classical Conditioning theory, (b) Balance Theory, (c) Mood Research, and (d) Salient Attribute Hypothesis, offer convergent interpretations of how A_{ad} and A_b are related over time.

Classical Conditioning Theory

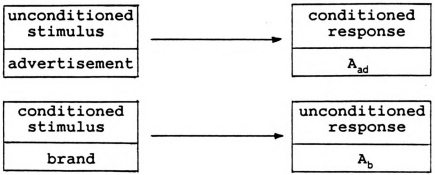
Shimp (1981) posited that an attitude toward ad is transferred to an attitude toward brand via a conditioning effect. He expected that the pairing of a connotative response (e.g. a feeling of joy) with a denotative response (e.g., a new brand name) would lead to a conditioned emotional affect toward the advertised brand.

Classical conditioning theory (Pavlov, 1927) indicates that a conditioned stimulus (CS) followed by unconditional stimulus (US) will automatically evoked a response, called the unconditioned response (UR). As the result of the pairing of CS and US, one could remove the US and the CS would produce the CR. The classical conditioning process is shown in Figure 2. In an advertising context, when an advertisement (US) creates positive (negative) attitude toward the ad (UR), the advertised brand (CS) can precipitate the same positive (negative) attitude toward the

brand (CR) due to classical conditioning.

Figure 2

Classical Conditioning Process in Advertising



Some researchers are critical on the generalizability of Pavlov's classical conditioning on advertising. McSweeney and Bierley (1984) claimed that the animal laboratory principles may not hold in the more complicated consumer behavior context. Allen and Madden (1985) agree with McSweeney and Bierley's critique and suggest that affective conditioning is a better focus in consumer behavior context. Empirically, however, they found little support for the affective-conditioning hypothesis.

On the other hand, several researchers have supported the conditioning effect in advertising conceptually and

empirically. Nord and Peter's (1980) behavioral modification theory explains the effects of advertising based on classical/operant conditioning. Gorn (1982) posited that background music could be conditioned with products, colored pens. When consumers were exposed to music they liked or disliked while being exposed to a product, their product preferences were influenced. Seventy-nine percent of the subjects selected the product (a pen of a given color) associated with the liked music, while only thirty percent picked the product (a pen of another color) associated with the disliked music. Yet, when the subjects were asked why they chose the specific color pen, no one mentioned music as the reason. Clearly, one might conclude that behaviors might be influenced by factor about which consumers unaware. Kroeber-Riel's (1983) experiment also supports the association between brand and emotion by classical conditioning. He paired a model brand name with emotional pictures (eroticism, social happiness, and exotic reactions) in slide advertisements according to the classical conditioning paradigm. The brand name alone aroused significant emotional reactions and the stronger the emotional scenes the more effective the conditioning that resulted. The direct association between affect and brand attitude was also supported by Bierley, McSweeney, and Vannienwkerk (1985). They manipulated four sets of three colored arbitrary geometric stimuli and the presence/absence

of well-liked music. The result revealed that the preference for a stimulus with well-liked music was higher than without the music.

Recently, Machleit and Wilson (1988) also provided evidence that conditioning based direct-affect-transfer hypothesis may be an adequate explanation for the effects of emotional feelings and A_{ad} on A_b in some situations. They hypothesized that if direct-affect-transfer parallels a conditioning process, correlations between emotional feeling and A_b and between A_{ad} and A_b would be significant and would increase with increased exposure to the advertisement. The result showed that only one correlation out of four different brand manipulations exhibited the significance and the anticipated pattern. They reasoned that for unfamiliar brands, direct-affect-transfer should be expected, but when the brand is familiar it should not be expected. They finally suggested that future research should evaluate brand familiarity as a moderator variable.

Shimp (1981) and Lutz (1985) added involvement to the picture. They suggested that direct-affect transfer may occur only in low involvement conditions. Additionally, MacKenzie and Lutz (1989) posited that pure affect transfer would occur in the situation of low ad message involvement and low ad execution involvement. Using four ad exposure situations (high/low ad message involvement x high/low ad execution involvement) they hypothesized the relationship

and called for empirical support.

To summarize, classical conditioning theory can give a good explanation of the A_{ad} and A_b association. Based on the theory, a positive relationship is expected between A_{ad} and A_b. Therefore, it is expected that a positive (negative) A_b would be formed when a positive (negative) A_{ad} is developed from advertisements.

Balance Theory

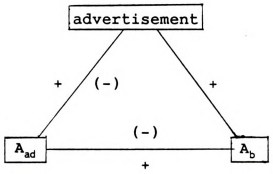
Balance theory offers another conceptual perspective to explain the positive relationship between A_{ad} and A_b. Borrowed from Heider (1946), Edell and Burke (1984) attempted to explain the balance among the consumer, the advertisement, and the brand. Balance theory assumes that a person strives to maintain balance among the components of any cognitive unit. Balance theory states that a balance would occur when the relationship between all three pairs is positive or when the relationship between one pair is positive and the other two are negative. Figure 3 represents balance theory in advertising context. Since the relationship between the advertisement and the brand is always positive, the consumer must either like both the advertisement and the brand or dislike them both (Edell and Burke, 1984). In the same vein, if A_{ad} is positive then A_b must be positive and if A_{ad} is negative then A_b must be negative to maintain the balance. The expected relationship

is a reciprocal between A_{ad} and A_b. That is, A_b also can influence A_{ad}. The theory has received partial support by Messmer (1979) in the study of unbroadcasted TV ads for well-known products. After measuring A_b before measuring A_{ad}, he found that prior A_b favorably influenced A_{ad}.

In summary, balance theory predicts a positive relationship between A_{ad} and A_b. Based on the theory, the expected relationship is that positive (negative) A_{ad} will cause positive (negative) A_b and vice versa.

Figure 3

Balance theory in advertising context



Mood Research

Research on the effects of mood states on affective reactions and judgments centers around two different links

(Gardner, 1985b). A direct linkage may be explained by associations in memory between mood states and affective reactions. According to Gardner (1985b), the association is due to a conditioned response based on Grifitt and Guay's (1969) perspective. They posited that stimuli which possess positive and negative reinforcement properties act as unconditioned stimuli which, in turn, evoke implicit affective responses. Gardner (1985b) views the stimuli as inducers of positive or negative mood states, also an indirect linkage may exist between mood inducers and evaluations. Isen, Shalker, Clark, and Karp (1978) postulated that the effects of positive mood may be mediated by cognitive activity such as information retrieval. According to this theory, advertising effects can be affected by moods evoked by programs. For example, a positive mood created by a television program can increase the accessibility of the positive material stored in memory. Consequently, judgement made on any part of the advertisement or brand evaluations would be biased congruent with a mood state.

Consequently, mood research also supports only a positive relationship between A_{ad} and A_b. As such, that research does not provide a rationale as to why some negative A_{ad} can be related to positive A_b.

Salient Attribute Hypothesis

From a different point of view, Edell and Burke (1984) developed the salient attribute hypothesis. This hypothesis states that an advertisement is a salient attribute of the brand. The logic is based on Fishbein's (1967) attitude formation model. It is reasoned that because most ad research is done in labs and advertisements are an attribute for the brand, there is the high correlation between the attribute (A_{ad}) and A_b (Mitchell and Olson, 1981). This hypothesis, however, has not received much attention or empirical support. As Edell and Burke (1984) pointed out, this hypothesis is merely a hypothesis because there is no empirical support.

In summary, the four theoretical perspectives described in the section indicate that a general understanding of the relationship between A_{ad} and A_b is not close at hand. Although the static explanations support positive relationship between A_{ad} and A_b, the theories do not provide explanations on how negative A_{ad} can be related to positive A_b. Available research, nevertheless, offers useful insights into what aspects of the A_{ad} and A_b relationship have been studied and supported. The research covers the common dimensions across theories and what aspects of the A_{ad} and A_b relationships have been overlooked.

Dynamic Views of the Relationship between A_{ad} and A_b

This section reviews what is known about A_{ad} and A_b over time. The longitudinal studies focus on how and why the association between A_{ad} and A_b changes dynamically. Some of the researchers attempted to explain why negative A_{ad} can be related to positive A_b after some time.

The theoretical perspectives that will be reviewed are (a) superiority-of-the-pleasant Hypothesis, (b) balance theory, (c) law of extremes hypothesis, (d) mere exposure effect hypothesis, and (d) sleeper effect theory.

Superiority-of-the-Pleasant Hypothesis (Generalization Hypothesis)

Silk and Vavra's (1974) superiority-of-pleasant hypothesis is based on the classical conditioning mechanism. They postulated that reactions to an advertisement are generalized to the brand by the viewer.

Later Shimp (1981) posited that A_{ad} is linearly related to A_b so that the more positive consumers' reactions are to the advertisement, the more positive their reactions to the brand.

In order to acquire conditioning effects several implications are suggested by McSweeney and Bierley (1984).

First, the advertisement must be presented several times to insure that a change in preference occurs. Second, the advertisement which uses a salient conditioned stimulus (CS) and a strong unconditioned stimulus (US) will be the most effective. Third, advertisements which are well-spaced in time should be more effective than ones which are not. Last, although there are no fixed rules about how quickly responses reach and asymptote, there will be some optimal number of presentations.

Conditioned responses will weaken over time due to extinction and/or forgetting (Domjan and Burkhart, 1986, p.64). Extinction and forgetting need to be distinguished. According to Domjan and Burkhart (1986, p.64), extinction is a gradual decline of the conditioned response because of repeated presentations of the CS without US. Forgetting, in contrast, is a decline in the strength of the conditioned response due to the passage of time. Extinction occurs when the CS and US relation is broken, but forgetting takes place with prolonged absence of exposure to the conditioned stimulus. The implications of extinction for consumer research is that conditioning will be most effective for products that are rarely seen outside of the commercials. Extinction, on the other hand, will occur rapidly for frequently seen product when the commercial is discontinued (McSweeney and Bierley, 1984).

To summarize, conditioning based superiority-of-the-

pleasant hypothesis predicts positive relation between A_{ad} and A_b and the association becomes stronger as the number of exposure increases until it reaches ceiling. The relationship weakens due to extinction and/or forgetting over time. Although the intensity of the relationship can be strengthened by increasing the number of ad exposures (reenforcement) or weakened by discontinuing the advertisement (extinction/forgetting), the valence of the relation remains the same.

Balance Theory

Balance theory predicts that the initial relationship between A_{ad} and A_b will remain over time. For example, once a positive A_b is formed due to a positive A_{ad}, then it will be sustained until other sources disturb or break the balance. If too many exposures create tedium, then the evaluation of A_{ad} will be worse and in turn it will decrease A_b to maintain the balance.

Edell and Burke (1984) expect the correlation between A_{ad} and A_b will be maximum if the balance is obtained immediately. They also anticipate that if balance is obtained gradually, then the correlation would become more positive over repeated exposure to the advertisement. Over time, the correlation should remain very high even without more exposures unless no events break the balance.

Therefore, balance theory predicts a positive relationship between A_{ad} and A_b over time. Furthermore, it is expected that the intensity of the affect or the valence will not be changed unless the balanced state between A_{ad} and A_b is affected by an external event. This prediction, however, does not seem to be acceptable intuitively and conceptually. If the expectation is true, continuous repetition of commercials would be a waste of resources. Also the theory does not specify how quickly one's cognitive structure reaches a balanced state.

Law of Extremes Hypothesis (Distinctiveness Hypothesis)

Considering a distinction between immediate and delayed effects, Silk and Vavra (1974) have posited a J-shaped relationship between A_{ad} and advertising effectiveness. The assumptions behind the hypothesis are (a) advertisements eliciting strong affective reactions are more involving, (b) brands associated with positive or negative ads are distinctive in memory and consequently increased familiarity with the brand will lead to more favorable attitudes toward the brand, and (c) reactions to the ad and reactions to the brand are separated in memory. Silk and Vavra (1974) predicted that both liked and disliked ads should develop more brand awareness and form more favorable A_b than neutral ads. Liked ads are expected to produce more favorable A_b

than that of disliked ads. Three possible explanations tell why a disliked ad can be effective (Aaker and Bruzzone, 1985). First, attention and processing could be stimulated without the negative reaction being transferred directly to the brand. This process assumes that ads eliciting strong affective reactions are more involving (Moore and Hutchinson, 1983). Second, irritation could distract, inhibiting counterarguing and, therefore, enhance persuasion (Aaker and Bruzzone, 1985). Finally, and perhaps the most importantly, brand familiarity created by exposures over time may increase positive brand attitude. Silk and Vavra (1974) argue that A_{ad} can not generalize or condition to A_b if the law of extreme explanation is true. Therefore, they postulate that dissociation between A_{ad} and A_b occurs over time and that leads to a "sleeper" effect.

The law-of-extremes hypothesis expects that intensity of affect, regardless of valence has the major role of developing a positive A_b if the reactions improve memory for the brand or facilitate processing of persuasive advertising copy and they are dissociated with A_b. Although the hypothesis is conceptually appealing, a question arises when the dissociation occurs: Why does the dissociation take place at an arbitrary time all of sudden? Even if the dissociation happens sometime, it is of no use to managers because no one can predict when it will occur.

Mere Exposure Effect Hypothesis

Zajonc (1968, 1980, 1986) has proposed mere exposure effect that extreme affective reactions facilitate memory for the advertised brand. He posited that the increased brand familiarity, in turn, may increase liking for the brand. Zajonc (1986) attempted to explain the mere exposure effect based on Waynbaum's (1907) vascular theory that expression of emotion may cause an emotional subjective state. Zajonc (1986) argued that if familiar objects induce a facial expression then it is possible that the facial expression can cause a subjective state which leads the person to say "I like it." Obermiller (1985) also suggested the "exposure without cognition model" and explained that familiarity may create positive feelings.

Sleeper Effect Theory

In social psychology the sleeper effect has been investigated extensively in understanding persuasion over time. According to Hovland, Lumsdaine, and Sheffield (1949), the sleeper effect describes a phenomenon whereby the impact of a persuasive message increases with the passage of time. According to the hypothesis, with introduction of a discounting cue an immediate attitude change is suppressed. With passage of time, however, the message and the discounting cue become dissociated from one

another so that the impact of message-related knowledge increases and attitude change. That is, the association between message and the discounting cue weakens over time and so the discounting cue becomes irrelevant for the evaluation of the message. Many studies demonstrated the sleeper effects (Hovland et al. 1949; Weiss, 1953; Kelman and Hovland, 1953; Johnson and Watkins, 1971).

The recent perspectives have developed in two stems. First, Gillig and Greenwald (1974) questioned the validity and replicability of the sleeper effect in their study "Is It Time To Lay The Sleeper Effect To Rest?" Followed by their study, other researchers (Gruder, Cook, and Hennigan, 1978; Cook and Fray,1978; Cook, Gruder, Hennigan, and Fray, 1979), focused on refining the definition and the operationalization of constructs. Despite criticisms, in the past several years, there has been empirical evidence which supports the sleeper effect. Therefore, the main research issue is no longer whether a sleeper effect exists, but when it is likely to occur (Hannah and Sternthal, 1984; Mazursky and Schul, 1988). According to Cook et al. (1979), four criteria are important to achieve the sleeper effect: (a) a message with a strong initial impact on attitude, (b) a discounting cue that inhibits immediate attitude change, (c) the dissociation of the discounting cue and message over time, and (d) the rapid dissociation of the discounting cue and message so that the message has some residual impact.

The other perspective concerns the process underlying the sleeper effect. Hannah and Sternthal (1984) applied the availability valence hypothesis to explain the sleeper effect in contrast to the traditional approach of dissociation of a discounting cue from the message. The availability valence hypothesis states that individuals' attitudinal judgments in response to a persuasive message are determined by the favorableness (valence) of the issue and relevant information available in memory at the time of judgement. Their test results were consistent with the availability-valence predictions. Attitude toward the message advocacy became more favorable with passage of time in the relevance cue conditions, but in the irrelevant cue conditions the passage of time had no effect of on attitudes. Mazursky and Schul (1988) supported the notion that the magnitude of the sleeper effect is influenced by the relative availability if the product information and the discounting cue appeal.

The investigation of the sleeper effect has important implications for marketing. The existence of the sleeper effect encourages the consideration of timing of attitude measurement as a relevant factor in predicting purchase decisions. Studies on the persuasion mechanism of advertisement can be enhanced by the sleeper effect explanation. Also, as a separate route from cognitive message processing, the relationship between A_{ad} and A_b can

be understood with the sleeper effect over time.

In this context, Moore and Hutchinson (1983) have postulated the familiarity-based sleeper hypothesis and the affect-based sleeper hypothesis. Their work is of importance to review in more detail because it is a notable attempt to explain the relationship between A_{ad} and A_b in conjunction with the sleeper effect. The familiarity-based sleeper hypothesis states that if A_{ad} generalizes to A_b, and if the influence of A_{ad} on A_b is initially strong, but weakens over time, then it is possible that increased brand familiarity resulting from ads that elicit strong affective reactions will eventually lead to increased favorability toward the advertised brand. The hypothesis predicts that the generalization hypothesis will be hold immediately after exposure to an ad, but with passage of time a J-shaped relationship will appear between A_{ad} and A_b. It also predicts that either a negative or a positive ad affect will result in better remembering of the brand. According to the hypothesis, over time the direct influence of ad affect on A_b should decay and the impact of brand familiarity should increase. On the other hand, Moore and Hutchinson's (1983) affect-based-sleeper hypothesis predicts that if ads eliciting strong positive or negative reactions are attended to more than neutral ads, then one might expect a J-shaped relation between A_{ad} and A_b immediately following ad exposure. The hypothesis also posits that after some delay

period, the relation between A_{ad} and A_b will be positive and linear because reactions to the ad and to the brand may become confused in memory. It is assumed that the influence of product attributes and brand familiarity on A_b is initially more important than ad affect in contrast to the familiarity-based sleeper hypothesis.

In order to test the hypotheses, Moore and Hutchinson (1983) manipulated forty-six subjects with eighty print ads for existing products in two-stage experiments. Because the products existed in the market, the major dependent variable was measured in terms of change in brand knowledge and brand consideration from base line measured in the Experiment 1.

From an analysis of variance, they found: (a) immediately following exposure to the ads, brand consideration and ad affect were linearly related, (b) after a delay period, a J-shaped relationship between ad affect and change in brand consideration developed, and (c)there is marginal support for the familiarity-based sleeper hypothesis because of the fact that only the seven-day delay group showed the expected U-shaped relation.

The study supports the familiarity-based sleeper hypothesis only marginally, and it is subject to a few caveats as well. First, the hypothesis states that "over time the direct influence of ad affect on A_b should decay and the impact of brand familiarity should increase (p 527)." This statement appears to be contradictory to their

critical assumption that "ad affect is forgotten more readily than brand familiarity (p 530)." If brand familiarity is forgotten as the assumption implies, the impact of brand familiarity cannot increase but will decrease with the passage of time. If the assumption is accepted, it would be a fair statement that over time both the direct influence of ad affect on A_b and the impact of brand familiarity should decrease, however, after a period of time the familiarity impact will outweigh the ad affect influence because brand familiarity is forgotten more slowly than ad affect. Second, the above assumption lacks theoretical support. Intuitively the assumption makes sense but more rigorous theoretical and empirical supports are needed. Third, they have used ads for existing products as stimuli. It is possible that initial brand familiarity might have a critical role whether ad affect would have a significant impact on A_b. According to Machleit and Wilson (1988), the level of brand familiarity may moderate the A_{ad} and A_b relationship. That is, for unfamiliar brands the A_{ad} effect on A_b is significant but for familiar brand it is not. Therefore, if ads for unfamiliar brands were used as stimuli, Moore and Hutchinson's (1983) experiment results would be clearer. Fourth, as they admitted, ad affect was measured rather than manipulated. Consequently, the findings are not causal but correlational. A research with ad manipulation is needed to clarify the causal

relationship. Fifth, they assumed that brand consideration reflects attitude toward brand and that brand knowledge is a proxy to brand familiarity. As they indicated (p. 530), brand consideration might be weakly related to real purchase behavior and brand knowledge may not be a good measure of brand familiarity. Rather than brand knowledge, brand name recognition or brand name recall would be a better measure of the brand familiarity because in the sleeper effect, the brand familiarity is more related to the initial memorial response to the brand name and not to knowledge about the brand, per se. Finally, the study underscored the role of memory in determining A_b (Moore and Hutchinson, 1983, p. 530). They suggested that future research needs to include memory effect, particularly the relative forgetting curves for various types of information that influence A_b. In the context, the different durations of affect influence and familiarity effect need to be investigated.

To summarize, the sleeper effect theory suggests another valid perspective in attempting to understand the relation between A_{ad} and A_b. Particularly, the modified sleeper effect hypothesis (i.e. the familiarity-based-sleeper hypothesis) gives an insightful approach to explain the A_{ad} and A_b relationship in separation of brand cognition (C_b). It can be derived from the above discussion that the main dimensions in the hypothesis consist of the valence and intensity of affect and familiarity of brand name.

Other Relevant Theories on the Role of Affect

In discussing why affective advertising may be more effective, Ray and Batra (1983) posited the following four reasons: (a) people may pay more attention to affective advertising, (b) affect may enhance the degree of processing, (c) affective executions may lead to more positive judgments of the advertised message, and (d) affective executions may be remembered better. Some of the reasons are reviewed extensively in this section.

Attention and Affect

For an ad to have an effect, it must draw attention. If an ad gets no attention, it may not have any effect in this overflow of information era. Affective advertising should be more effective in getting such attention (Ray, 1977). Ittelson (1973) also argues that the first level of response to the environment is affective. Emotions are perceived more readily than others (Broadbent, 1977). Bower and Cohen (1982) also assert a similar opinion that a person's feelings act like a selective filter. It, therefore, appears that both positive and negative affects get more attention than neutral and boring advertisements. For example, a humorous ad such as Bud Light beer gets more

attention than other dull ads. Also, ads with fear appeal (i.e. ad against drunken drive) create more attention. Perhaps an ad with a negative affect may create more attention than that with positive affect, because negative attributes tend to remain highly distinctive (Srull, 1983) and are relatively scarce whereas either positive or neutral ads are generally abundant.

Degree of Processing and Affect

Affect may enhance the degree of processing. Ray (1973, 1982) asserts that affective executions facilitate learning. He, therefore, suggests affective executions should be used in the situations where the natural drive is low. Kroeber-Riel (1979) also argues that the degree of information processing for a message is function of the degree of the message evokes arousal or phasic arousal.

Memory and Affect

Affect may facilitate memory. According to Dutta and Kanungo (1975), intensity of affect, regardless of valence, results in better memory. Particularly, affective executions can be remembered better over time than immediately after the exposure (Silk and Vavra, 1974). Srull (1983) examined the intensity hypothesis in his

experiment. The result reasonably strongly supported the finding that more intense moods, regardless of valence, facilitate better overall levels of recall for each of the manipulated ads. The aroused mood state by the intensity of affect leads to better overall levels of recall. He also found that initial evaluations are strongly influenced by subjective mood states at the time of information acquisition. The results reveal that positive (negative) mood states lead to more (less) favorable evaluations than neutral mood states. The research also found interaction between the subject's mood state at the time of retrieval and the type of information provided. The evidence shows the contrast effect that people remember better when the mood state at time of retrieval is in consistent with the valence of attributes. He tried to find the reason in the cue overload theory (Watkins and Watkins, 1975, 1979; Watkins, 1979). When a person is in positive mood, the retrieval of positive attribute is possible because the mood serves as a cue. Since the cue is associated with nearly all other positive events in the person's life, however, the cue becomes overloaded and less effective.

It is known that the more things are associated with a cue, the less effective the cue becomes (Watkins, 1979; Mueller and Watkins, 1977; Watkins and Watkins, 1975). Based on the same logic, negative attributes can be recalled better in the neutral or positive mood states, since

negative attributes will remain highly distinctive (Srull, 1983). In the same vein, if a brand name is encoded in association with negative (positive) A_{ad} then the brand name can be recalled when the retrieval mood is positive (negative).

CHAPTER THREE

HYPOTHESES AND METHODOLOGY

This chapter discusses hypotheses and methodology. It begins with the identification of primary dimensions in the relationship between and A_{ad} and A_b to integrate the theories. Then, derived hypotheses are discussed. The following sections provide definitions of constructs, a description of research design and subjects, development of stimuli and pretesting, and measurements of constructs.

Primary Dimensions in the Relationship Between A_{ad} and A_b: Integration of the Current Theories

The theories and hypotheses thus far reviewed in Chapter Two contribute to understand the relationship between A_{ad} and A_b over time. They have, however, limited power for explaining the relationship because each theory or hypothesis has been developed in different bodies of literature and in different domains, so that the explanation is more sectional than comprehensive. Therefore, an integration of the various limited but appealing theories is

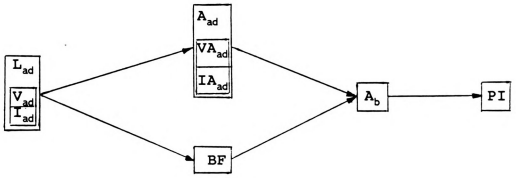
desired to give a comprehensive explanation of the relation over time. In this section, the primary dimensions are identified and formal hypotheses are generated in the following section.

Given the review of the literature in the previous chapter, three general dimensions seem to be important to explain and predict A_b based on A_{ad}. First, valence of affect seems to have a great influence on A_b. The valence can be either positive, negative, or neutral. All of the reviewed theories consider the valence of A_{ad} as an important cause on the direction of A_b. Second, the intensity of affect appears to be another important factor. The theories imply that more intense affect results in stronger A_b. Finally, familiarity is considered as another important factor in addition to the above two factors that are related to A_{ad}. Familiarity has been considered a primary factor in the mere exposure effect hypothesis (Zajonc, 1968; Harrison, 1977; Sawyer, 1981; Zajonc and Markus, 1982) and in the familiarity based sleeper effect (Moore and Hutchinson, 1983). Here familiarity refers to brand familiarity and how much the brand name can be recognized (or recalled).

With the identified primary dimensions, a hypothetical affective information processing model is developed based the integration of the theories. Figure 4 represents the model.

Figure 4

Hypothesized Affective Information Processing Model



Hypotheses

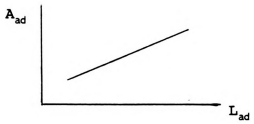
When people watch an advertisement, they develop an attitude toward the advertisement. In classical conditioning context, when an unconditioned stimulus is given, a conditioned response is developed. Hypothesis 1 focuses on the unconditioned response in the context of advertising. In advertising, the level of an advertisement is an unconditioned stimulus and attitude toward the advertisement is a unconditioned response. The relationship between these two constructs is expected to be positive. That is, as the level of advertisement increases, attitude toward the advertisement increases. Figure 5

represents the relationship.

H1: There is a positive relationship between the level of the advertisement (L_{ad}) and the attitude toward the advertisement (A_{ad}).

Figure 5

Hypothesis 1



Hypothesis set 2 posits a relationship between attitude toward the advertisement (A_{ad}) and attitude toward the brand (A_b), the effect of brand familiarity on A_b, and joint effect of the A_{ad} and BF on A_b.

As reviewed in Chapter Two, classical conditioning theory, balance theory, and mood research expect a positive relation between A_{ad} and A_b. In classical conditioning theory an A_{ad} is considered to be an unconditioned response and A_b is a conditioned response. Many studies support applications of the theory in advertising (Shimp, 1981; Nord and Peter, 1980; Gorn, 1982; Kroeber-Riel, 1983;

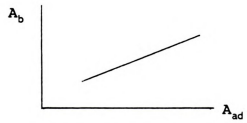
Bierley et al., 1985; Machleit and Wilson, 1988).

Balance theory also leads one to expect a positive relationship between A_{ad} and A_b. According to balance theory, since the relationship between advertisement and the brand is always positive, the consumer must either like both the ad and brand or dislike them both. Edell and Burke (1984) and Messmer (1979) support the idea. Mood research generally supports the positive relationship (Gardner, 1985; Isen et al., 1978). Therefore, Hypothesis 2a is derived from the theories and is shown in figure 6.

H2a: There is a positive relationship between the attitude toward the advertisement (A_{ad}) and the attitude toward the brand (A_b).

Figure 6

Hypothesis 2a



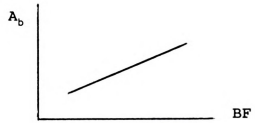
Hypothesis 2b was established based on mere exposure effect (Zajonc, 1968, 1980, 1986; Obermiller, 1985),

familiarity based sleeper effect (Moore and Hutchinson, 1983), and the law of extremes hypothesis (Silk and Vavra, 1974). The theories predict that increased familiarity will lead to more favorable attitude toward the brand. Figure 7 shows the relationship.

H2b: There is a positive relationship between brand familiarity (BF) and the attitude toward the brand (A_b).

Figure 7

Hypothesis 2b



Hypothesis 2c is the combination of hypothesis 2a and 2b. It is based on familiarity-based sleeper effect (Moore and Hutchinson, 1983)

H2c: Brand familiarity (BF) and the attitude toward the advertisement (A_{ad}) are jointly positively related to the attitude toward the brand (A_b).

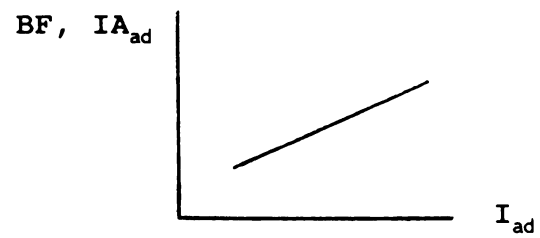
Either a positive or negative advertisement draws more attention than a neutral advertisement (Ray, 1977; Ittelson, 1973; Broadbent, 1977; Bower and Cohen, 1982). Affect also may enhance the degree of information processing (Ray, 1973, 1982; Kroeber-Riel, 1979). Dutta and Kanungo (1975), furthermore, posited the intensity hypothesis; intensity of affect, regardless of valence, results in better memory. Other researchers (Silk and Vavra, 1974; Srull, 1983), in addition, suggested that intensity of affect facilitates memory. Hence, hypothesis 3a and 3b are derived. Figure 8 represent Hypothesis 3a and 3b.

H3a: There is a positive relationship between brand familiarity (BF) and the intensity of an advertisement (I_{ad}).

H3b: There is a positive relationship between the intensity of the attitude toward the advertisement (IA_{ad}) and the intensity of the advertisement (I_{ad}).

Figure 8

Hypothesis 3a & 3b



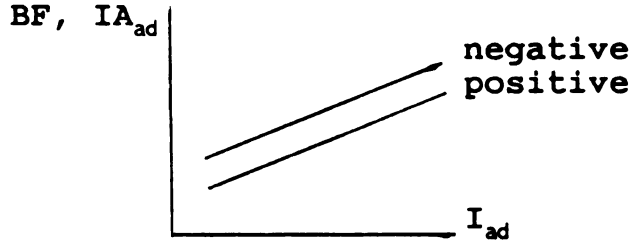
Hypothesis 3c and 3d are established based on cue overload theory (Watkins, 1975, 1979; Mueller and Watkins, 1977; Wakins and Wakins, 1975) and distinctiveness of a negative attribute in advertisements (Srull, 1983). The theories suggest that a negative affect may be more effective in memory and perceived more intensely than a neutral or positive affect. Figure 9 shows Hypothesis 3c and 3d.

H3c: At a given level of intensity of an advertisement, brand familiarity (BF) is higher for advertisements with a negative valence than for those with a positive valence.

H3d: At a given level of intensity of an advertisement (I_{ad}), the intensity of the attitude toward the advertisement (IA_{ad}) is higher for advertisements with a negative valence than for those with a positive valence.

Figure 9

Hypothesis 3c & 3d



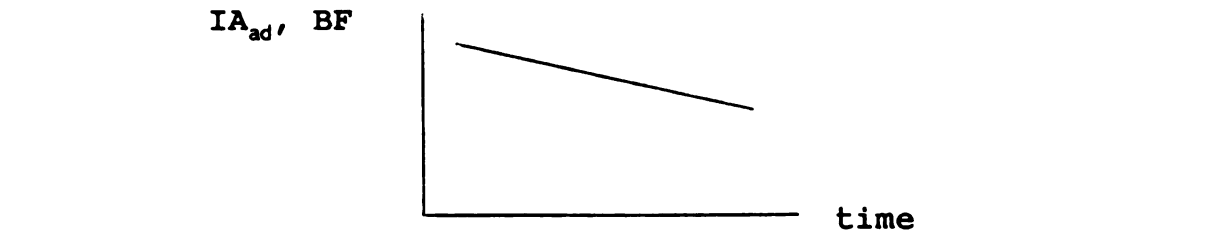
Perceived intensity of the attitude toward the advertisement (A_{ad}) and brand familiarity (BF) are expected to be weaken over time due to forgetting and extinction. The following hypotheses H4a and H4b attempt to examine the decrease for the given period of time (10 days). Figure 10 shows the possible decrease.

H4a: Intensity of the attitude toward the advertisement (IA_{ad}) decreases over time.

H4b: Brand familiarity (BF) decreases over time.

Figure 10

Hypothesis 4a and 4b



The following sections provide definitions of constructs, a description of research design and subjects, development of stimuli and pretesting, and measurement of constructs.

Definitions of Constructs

The definitions of constructs in this study are as follows:

Attitude: a favorable or unfavorable predisposition toward an object, including an evaluative component and an affective component

Attitude toward the Advertisement (A_{ad}): an attitude toward a particular advertising stimulus during a particular exposure occasion

Level of Advertisement (L_{ad}): perceived levels of advertisement categorized as five levels (strongly positive, weakly positive, neutral, weakly negative, and strongly negative)

Valence of Advertisement (V_{ad}): The direction (positive, neutral, or negative) of the level of advertisement

Intensity of Advertisement (I_{ad}): the strength of the level of advertisement

Valence of Attitude toward the Advertisement (VA_{ad}): the direction (positive, neutral, or negative) of attitude toward the advertisement (A_{ad})

Intensity of Attitude toward Advertisement (IA_{ad}): the strength of attitude toward the advertisement (A_{ad})

Attitude toward the brand (A_b): an attitude toward a particular brand

Brand Familiarity (BF): the degree of recognizing or

recalling a particular brand name

Purchase Intention (PI): a person's likelihood of purchasing a particular brand

Research Design and Subjects

In this research two factors were employed. The first manipulation factor was the levels of advertisement. The levels were manipulated with five combinations of the valence and the intensity of the advertisement (strongly positive (++), weakly positive (+), neutral (0), weakly negative (-), and strongly negative (--)). The five different levels were manipulated by the background music and the pictures used in the advertisements. The experimental design included three different times of measurement (immediately after advertisement exposure, four days later, and ten days later). All of the dependent variables (BF, A_{ad}, and A_b) were measured three different times.

In sum, the design of the experiment was a 5 x 3 between-subject design with five levels of advertisement (++, +, 0, -, --) and three different times of measurement (immediately after advertisement exposure, four days later, and ten days later).

A within-subject design was initially considered

because, generally, it is more powerful and requires fewer subjects than an equivalent between-subject design. The within-subject design, however, was eliminated due to possible carryover effect. Carryover effects occur when a previous treatment alters the observed behavior in a subsequent treatment and pose a serious threat to the internal validity of the experiment (Bordens and Abbott, 1988, p.228). In the current experiment, the carryover effect could be a serious problem because A_{ad} immediately after ad exposure may affect A_{ad} measured four days later and A_{ad} ten days later in turn.

Development of stimuli and pretesting

The product advertised in the advertisement was desired to be low involvement consumer product with an unfamiliar brand name. A chewing gum was selected as the product category because, generally, it can be considered a not important, less risky, low priced product. The brand name had to be unfamiliar and so a creation of a fictitious brand name was desirable. The new name should not have any meanings or connotations because the attitude toward the brand (A_b) can be affected by the meaning of the brand name. An unknown brand name was necessary because brand name familiarity would be measured. In the selection of the most desirable brand name, 20 alternatives were initially

considered and compared. Out of the 20 alternatives, the name Chowa was selected after discussion with several native English-speaking Americans. The consensus was that Chowa does not have any special meaning and sounds fine as a chewing gum brand name.

The advertisements were made of three elements-brand name, picture, and background music. There was no additional message in order to control Fishbeininan cognitive effects. The types of picture and background music were expected to generate different levels of advertisement.

In selecting stimuli, pretesting was necessary to get a successful manipulation. In order to decide background music, 60 junior or senior university students were selected and asked to write one or two songs and/or any type of music that they found the best, the most likeable, non-irritating, interesting, favorable, enjoyable, and pleasant. Since the answers were varied, a professional music reviewer was consulted to reduce the number of alternative kinds of music that would be used in the music pretest. The reviewer also made lists of music considered to be moderately good, neutral, and music that would be perceived by college junior and seniors as the worst (the least likeable, irritating, boring, unfavorable, unenjoyable, and unpleasant). Based on the lists, 23 musical pieces were selected for pretesting. The most representative part of each musical piece was

recorded for 30 seconds. Thirty-five students listened to and rated 23 musical pieces right after they listen to each selection. The scale used had a 7-point semantic differential between 7 adjective pairs (bad-good, like-dislike, irritating-not irritating, interesting-not interesting, favorable-unfavorable, enjoyable-unenjoyable, pleasant-unpleasant). Based on the average scores of the scale, the musical selections were categorized from strongly negative to strongly positive.

For picture selection, the researcher collected 25 possible pictures for chewing gum advertisements with consideration given to five different levels of advertisement (from very negative to very positive). After consulting a professional artist and other experts, three pictures were selected for each of five categories.

The Chowa chewing gum's logo and package were designed by a professional artist and approved by the researcher. The professional artist added the package design to each of the 15 pictures, that is, the picture part of each advertisement consisted of a Chowa chewing gum package and a background picture. The final advertisement pictures were transformed into slides by a professional photographer.

The 15 slides were matched with the music by considering the types of pictures and music. Therefore, three final alternative advertisements for each of the five levels of advertisement were identified for use in

advertisement pretest.

In the pretest of the advertisements, a total of 76 junior or senior university students participated. The pretest was conducted in three different sessions. In the first session, 22 students participated; 25 students participated in the second session, and 29 students in the third session. In each session the research let subjects watch five advertisement consecutively without rating them in order for them to develop consistent judgmental level. In each session, the order of the advertisements were randomly altered to prevent any order biases.

In each session, after watching each advertisement slide with a background music, the students answered a question to identify their perceptions of the advertisements: strongly negative (-2), weakly negative (-1), neutral (0), weakly positive (+1), or strongly positive (+2). Then, the mean values of the fifteen advertisements were compared. Finally five advertisements were identified and selected to represent the five levels of advertisements in the experiment. The five advertisements selected are summarized in Table 1.

Next, the mean difference between adjacent categories were compared and the means were found to be different. The mean of strongly positive advertisement is significantly higher than that of weakly positive advertisement ($p < .01$); the mean of weakly positive advertisement is significantly

Table 1

Selected Advertisements

Level	Mean Score (Std. Dev.)	Description
Strongly positive	1.63 (.67)	Picture: Three young people are sledding with big smiles Background music: "In The Air Tonight" by Phil Collins
Weakly positive	.64 (1.22)	Picture: A young woman is blowing bubble gum Background music: "If Only Love" by Liona Boyd (Guitar Music)
Neutral	-.03 (1.17)	Picture: A package of Chowa in a briefcase with a Wall Street Journal, a baby toy, etc. Background music: "Tara's Theme" by Liona Boyd (Guitar Music)
Weakly negative	-.30 (1.39)	Picture: Eight men are swimming in a pool Background music: "Metal Storm Face the Slayer" by Slayer
Strongly negative	-.71 (1.16)	Picture: A fat woman (made of play-dough) is holding a package of Chowa Background music: Traditional Indian music

higher than that of neutral advertisement ($p < .01$); the mean of neutral advertisement is marginally higher than that of weakly negative advertisement ($p < .10$); the mean of

weakly negative is significantly higher than that of strongly negative advertisement ($p < .05$). Consequently, the five selected advertisements were concluded to be reasonably good stimuli for further experiment.

Experimental Procedure

The experiment was carried out in three different stages in ten days. In the first stage, the subjects were divided into five different groups based on five levels of advertisement (strongly positive (++), weakly positive (+), neutral (0), weakly negative (-), and strongly negative (--)). Each group watched a slide show "Getting Ready To Ride" in which three times of an advertisement were embedded. The slide show "Getting Ready To Ride" is an instructive program that tells viewers how to find the right bicycle, how to ride, and how to maneuver in emergency. The slide program is considered to be a nonemotional and neutral. Total running time of the slide show was 11 minutes and 12 seconds. The placement of the advertisements in the slide show is shown in the Table 2.

Table 2

Placement of Advertisements

Time	Sequence
00:00	Getting Ready To Ride
02:35	Advertisement
03:05	Getting Ready To Ride
06:22	Advertisement
06:52	Getting Ready To Ride
09:22	Advertisement
09:52	Getting Ready To Ride
11:12	End

No explanation about the purpose of the experiment was given to the subjects before they watched the slide show in order to ensure the watching environment as natural as possible. After watching the show, only one third of subjects in each group remained to answer the questionnaire. In the second stage (four days later), another one third of each group answered the same questionnaire. In the third stage (ten days later), the other one third of the each group answered the questionnaire.

Subjects

The subjects were students in a large midwestern university who received extra credit in a marketing class for answering the questionnaires. After all data were collected, the subjects were debriefed. Using relatively homogeneous student subjects gave the benefit of easy control. The subjects had to sign up in advance for the best option out of the possible three dates for answering the questionnaire. Reminder calls were made to each student to ensure the attendance in the second and third stages. As the result, a total of 254 students participated in the experiment. Due to the difficulty of controlling many class sections and absences, however, the cell sizes were turned out to be unequal as shown in the Table 3. If cell sizes are different, unequal weight will be assigned to the experimental conditions in the statistical analysis and the effect of violating the distribution assumptions of the analysis of variance (i.e., normality and homogeneity of variance) would be increased. Each cell size was reduced to 11 because that was the smallest obtained cell size in the experiment. Even though the cell size was reduced, the degrees of freedom in the error term was as large as 150. The power in the analysis of variance would not decrease much from that with the degrees of freedom of 241, because

there is no big improvement of the power after the degrees of freedom exceeds 100 in the F distribution. In fact, the power of the analysis variance was well above 90 percent, assuming the effect size was between medium and large at the α level of .05 (Cohen, 1977). In 13 cells, the desired numbers of subjects, except one subject, were eliminated randomly. One subject was initially eliminated from the sample because he or she answered that he or she has heard the brand name Chowa once before the experiment. Presumably the subject had participated in the pretest. The result was that 11 subjects in each of the 15 cells made a total of 156 subjects.

The mean age of the subjects was 21.4 and ranged from 20 to 30 years of age. Most, or 90.9 percent, of the subjects were aged between 20 and 22. Most of the subjects (71.5 percent) were seniors and 28.5 percent were juniors. Among the subjects, 52.1 percent were male and 47.9 percent were female.

Table 3

Cell sizes

		Time		
		Immediately after	4 Days later	10 Days later
Level of Ad	++	11 (22)	11 (16)	11 (18)
	+	11 (21)	11 (14)	11 (19)
	0	11 (15)	11 (18)	11 (11)
	-	11 (21)	11 (16)	11 (12)
	--	11 (16)	11 (24)	11 (11)

* Initial cell sizes are in the parenthesis

Measurement

The constructs in the experiment and their operationalizations are in the following section.

Attitude toward the Advertisement (A_{ad})

The attitude toward the advertisement (A_{ad}) was measured by the mean scores obtained from seven-point semantic differential items of bad-good, dislike-like, irritating-not irritating, interesting-boring, favorable-

unfavorable, enjoyable-unenjoyable, unpleasant-pleasant. These scales are similar and consistent with the literature (Mitchell and Olson, 1981; Mitchell, 1983; Gardner, 1985; MacKenzie, Lutz and Belch, 1986; Machleit and Wilson, 1988). The items randomly altered the direction of the adjective continua following a common practice. This convention is intended to overcome response sets that could adversely affect the validity of the instrument (Mueller, 1986, p.52).

Valence of Attitude toward the Advertisement (VA_{ad})

The valence of attitude toward the advertisement (VA_{ad}) was measured by the sign of the A_{ad} measurement. Since the adjectives in the semantic differential in each item were opposite, the middle point was considered to be neutral, and the other two parts were considered as either positive or negative according to the direction of the adjectives.

Intensity of Attitude toward the Advertisement (IA_{ad})

The intensity of attitude toward the advertisement (IA_{ad}) was measured by the strength of the A_{ad} regardless of the valence. The larger the absolute value of the A_{ad}, the more intense the A_{ad} is.

Attitude toward the Brand (A_b)

The attitude toward the brand (A_b) was operationalized on seven-point semantic differential scales

of good-bad, dislike-like, favorable-unfavorable, enjoyable-unenjoyable, useful-useless, low quality-high quality, beneficial-harmful. The directions of item adjectives were randomly altered and scores will be averaged.

Brand Familiarity (BF)

Brand name familiarity (BF) was measured by both recognition and recall of the brand name. In measuring the brand name recognition, a six-point confidence rating procedure was employed. Assuming familiarity lies along a continuum, the procedure divides the familiar-unfamiliar range into six intervals, with one extreme indicating "definitely familiar" and the other indicating "definitely unfamiliar." The confidence rating procedure obtains more information about the certainty of the subject's judgment than that can be obtained from a simple familiar-unfamiliar scale. Generally even number of scales are used, permitting all responses to be divided into one of the two familiar-unfamiliar categories if necessary (Snodgrass, Levy-Berger, and Haydon, 1985, pp 194-195).

In measuring brand name recall, unaided recall was used. The question was "You have seen a few times of an advertisement during the slide show (Getting Ready To Ride). Please recall the brand name that appeared in the commercial."

Purchase Intention (PI)

Purchase intention was measured by the likelihood of purchasing the product in the future. The likelihood was operationalized on seven-point semantic differentials of improbable-probable, likely-unlikely, and possible-impossible. Then, the three scores were averaged.

CHAPTER FOUR

RESULTS

The results of the experiment are presented in this chapter. The chapter begins with reliability measurements followed by a manipulation check, and concludes with tests of hypotheses.

Reliability Measurements

In this research, multi-item scales were used to measure the attitude toward the advertisement (A_{ad}), the attitude toward brand (A_b), and purchase intentions (PI). Cronbach's coefficient α was used to analyze reliabilities of the two measurements. Cronbach's coefficient α measures internal consistency of multi-item scale.

Cronbach's coefficient α for the measurement of the attitude toward the brand (A_b) was .9072. and all of the seven semantic differentials were significant good measurements according to sensitivity analyses. Also, all seven items were significantly good in the attitude toward the advertisement (A_{ad}) measurement and the Cronbach's coefficient α for A_{ad} was turned out to be as high as .9398.

The purchase intention (PI) scale also revealed a high coefficient α of .9363. Since the Cronbach's coefficient α's are high, all of A_{ad}, A_b, and PI measurements are internally consistent and, therefore, reliable for further analyses.

Manipulation Check

The brand name Chowa, a fictitious brand name for a chewing gum, initially should not have been familiar to the subjects because the brand name was newly created. Using an initially unknown brand name was important in this experiment because brand name familiarity was measured at each time of the measurement. All except one subject answered that they never heard the brand name Chowa before the experiment. Only one subject indicated that he or she heard it only once before. It is assumed that he or she had participated in the pretest and the subject was eliminated from the analysis. Therefore, the brand name Chowa was initially not familiar to any of the participated subjects whose answers were analyzed.

The subjects were supposed to have no idea about the purpose of the experiment because no instruction about the purpose was given and, therefore, they had to pay attention to neither the program nor the advertisement alone. The subjects were asked on a seven-point scale in the

questionnaire if they had paid more attention to the program or more to the advertisement during the slide show. The mean of the answers was .127; the mode was 0; the median was 0. The percentage of each answer category was ideally distributed as shown in the Table 4.

Table 4

Percentage of Each Attention Category

Label	category	percent
more to the program	-3	13.3
	-2	14.5
	-1	9.7
	0	17.6
	1	15.2
	2	12.7
more to the advertisement	3	17.0

Tests of Hypotheses

This section explains the test results of the hypotheses that were derived in chapter three.

Hypothesis 1

It was hypothesized that there is a positive relationship between the level of the advertisement (L_{ad}) and the attitude toward the advertisement (A_{ad}). The

relationship was investigated with the Pearson correlation coefficient between the two constructs. The correlation for the all of the data was computed as .70 and was significantly greater than zero ($p < .01$). The significantly positive correlation indicates that there is a positive relation between the level of advertisement (L_{ad}) and A_{ad}. A positive relationship between L_{ad} and A_{ad} means that as the level of the advertisement (L_{ad}) increases, the attitude toward the advertisement (A_{ad}) increases.

The correlation between the level of the advertisement (L_{ad}) and the attitude toward the advertisement (A_{ad}) was also calculated for the three different times of measurement and the three correlations were compared. The computed correlations were summarized in the Table 5. Right after the advertisement exposure, the correlation between L_{ad} and A_{ad} was .75 ($p < .01$); four days later the correlation was .72 ($p < .01$); 10 days later the correlation was .59 ($p < .01$). All three correlations were significantly greater than zero but the correlations decreased with the passage of the time. As the Table 6 indicates, the correlation measured four days later ($r = .75$) decreased from that measured right after the advertisement exposure ($r = .72$) even if the decrease was not statistically significant. The correlation after ten days ($r = .72$) decreased significantly from that after four days ($r = .59$). The tests revealed that (a) there was a directional decrease from the

correlation right after ad exposure to the correlation after

Table 5

Correlation between L_{ad} and A_{ad}

time	correlation	p (one tail)
overall	.70	< .01
right after ad exposure	.75	< .01
four days later	.72	< .01
ten days later	.59	< .01

Table 6

Differences among Correlations between L_{ad} and A_{ad}

Correlations	*Z-value	p (two tail)
Right after ad exposure and four days later	.33*	.94
Four days later and ten days later	8.11*	< .01

$$* \quad Z = \frac{1/2 \ln \frac{1 + Vm}{1 - Vm} - 1/2 \ln \frac{1 + Vf}{1 - Vf}}{\frac{1}{Nm - 3} + \frac{1}{Nf - 3}}$$

,where Vm, Vf = correlation coefficient
Nm, Nf = sample size

four days, and (b) there was a significant decrease between the correlations after four days later and ten days later ($p < .01$). Consequently, these figures indicate that the correlation between L_{ad} and A_{ad} weakens over time.

In sum, the test results suggest a positive relationship between L_{ad} and A_{ad} and the relationship tends to decrease with the passage of time.

Hypothesis 2a

Hypothesis 2a holds that there is a positive relationship between the attitude toward the advertisement (A_{ad}) and the attitude toward the brand (A_b). A simple linear regression between A_b and A_{ad} for overall data revealed the ß coefficient of A_{ad} (.596003) was statistically positively significant ($p < .01$). The significantly positive ß coefficient indicates a positive relationship between A_{ad} and A_b. This relationship means the generalization between A_{ad} and A_b exists for the given period of time (10 days)

The relationship was further investigated at the time of each of the measurements. The regression models for each time period were tested and the results are shown in Table 7. All of the t-tests indicate that the A_{ad} is a positively significant variable for predicting A_b. Consequently, the significant results indicate that attitude toward the

advertisement has a positive relationship with attitude toward the brand, and that this relationship was maintained for the given period of time (10 days).

Table 7

Regression Models between A_b and A_{ad}

time	regression	* p	R^2
overall	$Y = .041165 + .596003 X_1$	< .01	.526
right after ad exposure	$Y = .134942 + .626987 X_1$	< .01	.541
four days later	$Y = -.111350 + .658253 X_1$	< .01	.645
ten days later	$Y = .052497 + .457587 X_1$	< .01	.361

where X_1 = attitude toward the advertisement (A_{ad})
Y = attitude toward the brand (A_b)

* one tail test (H_0: $\beta_1 <= 0$)

Hypothesis 2b

Hypothesis 2b predicts that there is a positive relationship between brand familiarity (BF) and the attitude toward the brand (A_b). In order to test the hypothesis, a sets of regression models for each time period as well as overall data were tested. Furthermore, in order to see if there are any differences between brand name recognition

measurement and brand name recall measurement, two sets of separate regression models were built for the two different independent variables. The regression models were shown in Table 8 and Table 9.

As the p-values indicate, none of the β_1 coefficients were significantly positive. Only the test for the regression model right after advertisement exposure marginally supported a positive relationship between A_b and brand name recall. Furthermore, none of the β_1 coefficients was different from zero. Therefore, it is concluded that no evidence indicates either brand name recognition or unaided brand name recall has positive relationship with the attitude toward the brand. In other words, when brand name recognition or recall is the only independent variable to predict A_b, neither is a significant variable.

Table 8

Regressions Models between A_b and Brand Name Recognition

time	regression	p
overall	$Y = -.140090 - .022747\ X_1$	.60* .79**
right after ad exposure	$Y = .254240 - .105352\ X_1$	.71* .59**
four days later	$Y = -.315573 - .016908\ X_1$	.55* .90**
ten days later	$Y = -.152916 - .021255\ X_1$	.57* .87**

where X_1 = brand name recognition
Y = attitude toward the brand (A_b)

* one-tail test (H_0: $\beta_1 <= 0$)
** two-tail test (H_0: $\beta_1 = 0$)

Table 9

Regression Models between A_b and Brand Name Recall

time	regression	p
overall	$Y = -.204633 + .011541\ X_1$	.48* .96**
right after ad exposure	$Y = -.326531 + .477791\ X_1$	.08* .16**
four days later	$Y = -.232804 - .241686\ X_1$	.79* .43**
ten days later	$Y = -.076923 - .248200\ X_1$	.86* .28**

where X_1 = brand name recall
Y = attitude toward the brand (A_b)

* one-tail test (H_0: $\beta_1 <= 0$)
** two-tail test (H_0: $\beta_1 = 0$)

Hypothesis 2c

Hypothesis 2c explains that brand familiarity (BF) and the attitude toward the advertisement (A_{ad}) are jointly positively related to the attitude toward the brand (A_b). The hypothesis was tested with multiple linear regressions in which A_{ad} and BF are independent variables and A_b is the dependent variable. Two sets of regression models for the brand name recognition and recall were also developed. The regression models were shown in Table 10 and Table 11.

In all of the eight regression models in Table 10 and Table 11, the attitude toward the advertisement was a highly significant independent variable and neither brand name recognition nor recall was significant. This finding only partially supports hypothesis 2c that predicts that both of the independent variables are significant.

As predicted, however, the test indicates that the attitude toward the advertisement has a strongly positive relationship with the attitude toward the brand at any time during the experiment. This is because the attitude toward the advertisement in each regression model at any given time of measurement was strongly significant. All eight tests gave $p < .001$. This result, therefore, strongly confirms the generalization by classical conditioning between attitude toward the advertisement and attitude toward the brand. Furthermore, this relationship was maintained over a limited time.

Table 10

Regressions for Brand Name Recognition

time	regression
overall	$Y = .037626 + .596033\ X_1 + .001388\ X_2$ $* \quad (.044487) \quad (.060041)$ $** \quad (<.001) \quad (.491)$ $R^2 = .526$ $R^2 = .520$ Standard Error = .74161 n = 165
right after ad exposure	$Y = .493502 + .629100\ X_1 - .132148\ X_2$ $(.079275) \quad (.129388)$ $(<.001) \quad (.845)$ $R^2 = .550$ $R^2 = .533$ Standard Error = .83169 n = 55
four days later	$Y = -.240909 + .662156\ X_1 + .055004\ X_2$ $(.067705) \quad (.083759)$ $(<.001) \quad (.514)$ $R^2 = .648$ $R^2 = .634$ Standard Error = .67259 n = 55
ten days later	$Y = .066148 + .457465\ X_1 - .005314\ X_2$ $(.084372) \quad (.104019)$ $(<.001) \quad (.502)$ $R^2 = .361$ $R^2 = .337$ Standard Error = .68485 n = 55

where X_1 = Attitude toward the advertisement (A_{ad})
X_2 = brand name recognition
Y = Attitude toward the Brand (A_b)

* (standard error of the coefficient)
** (p (H_0: ß <= 0))

Table 11

Regressions for Brand Name Recall

time	regression
overall	$Y = .043901 + .596023\ X_1 + -.004947\ X_2$ $* (.044470) \quad (.116093)$ $** (<.001) \quad (.502)$ $R^2 = .526$ $R^2 = .520$ Standard Error = .74161 n = 165
right after ad exposure	$Y = .043313 + .617806\ X_1 + .144289\ X_2$ $(.081160) \quad (.236398)$ $(<.001) \quad (.272)$ $R^2 = .545$ $R^2 = .527$ Standard Error = .83700 n = 55
four days later	$Y = -.138277 + .661691\ X_1 + .055400\ X_2$ $(.068626) \quad (.184596)$ $(<.001) \quad (.765)$ $R^2 = .646$ $R^2 = .632$ Standard Error = .67478 n = 55
ten days later	$Y = .176295 + .456294\ X_1 - .236183\ X_2$ $(.083014) \quad (.182060)$ $(<.001) \quad (.900)$ $R^2 = .381$ $R^2 = .358$ Standard Error = .67404 n = 55

where X_1 = Attitude toward the Advertisement (A_{ad})
X_2 = brand name recall
Y = Attitude toward the Brand (A_b)

* (standard error of the coefficient)
** (p (H_0: ß <= 0))

Unexpectedly, however, none of eight tests for the brand familiarity indicate a positive relationship between the brand familiarity (BF) and the attitude toward the brand (A_b). The relationship between BF and A_b was further analyzed by an analysis of covariance (ANCOVA). In the ANCOVA, the dependent variable (A_b) was measured by the independent variable (the brand name recognition), with A_{ad} as a covariate. The result of the ANCOVA indicated that the brand name recognition was not a significant variable. Table 12 shows the ANCOVA result. From the test results of regression models and ANCOVA, it was concluded that there is no evidence to indicate a positive relationship between BF and A_b.

Table 12

ANCOVA: Brand Name Recognition

Source	SS	DF	MS	F	p
within cells	88.92	160	.56		
regression	98.01	1	98.01	176.35	.000
Recognition	.17	3	.06	.10	.957

Hypothesis 3a

It was hypothesized that there is a positive relationship between brand familiarity (BF) and the intensity of the advertisement (I_{ad}). This hypothesis will be called as "intensity hypothesis for BF" conveniently.

In order to test the hypothesis, the correlation

between brand familiarity measured by brand name recognition and I_{ad} measured by the absolute value of the level of the advertisement was computed (Table 13). For the overall data, the correlation coefficient between brand recognition and the I_{ad} was calculated as .16; it was significantly positive ($p = .019$ at one tail test).

At each period of time, the correlation between brand recognition and the I_{ad} was measured for further analysis. The correlation coefficient right after the advertisement exposure was .20 and was marginally significant ($p = .73$); the correlation four days later was .31 and significant ($p = .010$); ten days later the correlation turned out to be -.10 and was not different from 0 ($p = .468$ at two-tail test). The differences between these correlations were statistically tested and are shown in Table 14. The difference between the correlation coefficient right after ad exposure and the correlation four days later was not statistically significant regardless of the increase from .20 to .31. The correlation, however, decreased from .31 to -.10 between the period of the fourth day and the tenth day after the advertisement exposure.

Table 13

Correlation Coefficients between Brand Familiarity and the Intensity of the Advertisement

	time			
	overall	right after ad exposure	four days later	ten days later
Brand Familiarity	.16 *(p=.019)	.20 (p=.073)	.31 (p=.010)	-.10** (p=.734)

* one-tail test (H_0: r <= 0)
** p = .468 (when H_0: r = 0)

Table 14

Differences between Correlations

Correlations	Z-value	p (two tail)
Right after ad exposure and four days later	-.60	.55
Four days later and ten days later	2.15	.03

A set of multiple comparisons for the means of each recognition measurement for each level of the advertisement were planned and performed in order to see if there are differences. The means of brand name recognition under each condition were presented in Table 15. From the "intensity hypothesis for BF," it is expected that the more intense the

advertisement level, the higher the brand recognition. The multiple mean comparisons for the expectation were performed by SPSS MANOVA contrast procedure and the results were shown in Table 16.

Table 15

Brand Familiarity (Recognition)

Level of ad	right after ad exposure	four days later	ten days later	overall
strongly positive	3.000 (<.001)	2.455 (1.036)	2.636 (.545)	2.697 (.684)
weakly positive	2.636 (.924)	2.545 (1.036)	2.727 (.905)	2.636 (.929)
neutral	3.000 (<.001)	1.545 (1.508)	1.909 (1.300)	2.152 (1.278)
weakly negative	2.182 (1.401)	2.545 (.934)	3.000 (<.001)	2.576 (1.001)
strongly negative	2.727 (.905)	2.818 (.405)	2.636 (.924)	2.727 (.761)
average	2.709	2.382	2.582	

Table 16

Multiple Mean Comparisons of Brand Name Recognition across the Level of Advertisement

level of advertisement	mean difference	std. err.	*p
strongly negative vs. weakly negative	.15152	.22661	.252
weakly negative vs. neutral	.42424	.22661	.032
neutral vs. weakly positive	-.48484	.22661	.017
weakly positive vs. strongly positive	-.06061	.22661	.395
strongly negative vs. neutral	.57576	.22661	.006
neutral vs. strongly positive	-.54545	.22661	.009
negative vs. neutral	.50000	.19625	.006
neutral vs. positive	-.51515	.19625	.005

* one-tail test

The multiple mean comparisons clearly indicated that the more intense the level of advertisement, the more familiar the brand name. In other words, the higher the intensity of the advertisement, the more the brand name will be familiar to consumers. This generalization is due to the following two sets of test results.

First, the contrasts between adjacent levels of advertisement indicated that when the level of the advertisement is more intense, the brand name is better recognized. The brand name under the condition of strongly negative advertisement is more highly recognized than that under the weakly negative advertisement condition (directionally supported); the brand name recognition under the condition of weakly negative advertisement is higher than that under the neutral advertisement condition ($p = .032$); the brand name recognition under the condition of weakly positive advertisement is higher than that under the neutral advertisement condition ($p = .017$); the brand name recognition under the condition of strongly positive advertisement is higher than that under the weakly positive advertisement condition (directionally supported); consequently, strong intensity of both positive and negative advertisement caused better brand name recognition than the neutral advertisement.

Second, both negative and positive advertisement caused better brand name recognition than neutral advertisement. The test result indicate that brand name recognition under negative (composite of strong and weak intensity) advertisement condition is higher than that under neutral advertisement ($p = .006$); brand name recognition under positive (composite of strong and weak intensity) advertisement condition is higher than that under neutral

advertisement.

To summarize, the "intensity hypothesis for BF" is supported by strong evidence.

Hypothesis 3b

The hypothesis stated that there is a positive relationship between brand familiarity (IA_{ad}) and the intensity of the advertisement (I_{ad}). This hypothesis can be called as "intensity hypothesis for IA_{ad}."

In order to test the hypothesis, the correlations between IA_{ad} and I_{ad} at different time of measurement were compared, and the mean values of IA_{ad} in different levels of advertisement were contrasted.

As Table 17 indicates, the correlations between IA_{ad} and I_{ad} at any time periods were significantly positive. The correlation went up from .40 to .45 after four days; it decreased to .23 ten days later. Neither change, however, was statistically significant. Table 18 reveals the test results for the changes. No changes were significant at an α level of .05. That is, the positive relationship between IA_{ad} and I_{ad} is relatively stable across the given time period (10 days).

Hypothesis 3c

It is expected that at a given level of intensity of an advertisement, brand familiarity (BF) is higher for

advertisement with a negative valence than for those with a positive valence. This hypothesis can be called as "valence hypothesis for BF." To test this hypothesis, brand familiarities under the same intensity level of advertisement but with opposite valence needs to be compared.

In the manipulation of the experiment, the intensity of strongly negative advertisement (mean = .85) and the intensity of weakly positive advertisement (mean = .64) were not statistically different. According to a pre-test for the difference between the two intensities (standard deviations are 1.16 and 1.22 respectably), no evidence indicated the two intensities are different when α is at a .05 level ($p = .2758$). Therefore, the mean values of brand familiarity under strongly negative advertisement and weakly positive advertisement conditions can be compared to find out if there is a difference between them.

The mean value of brand name recognition under the strongly negative advertisement was 2.727 with a standard deviation of .761, and that under weakly positive advertisement was 2.636 with a standard deviation of .929. A contrast by SPSS MANOVA procedure indicates that the difference was directionally supported but was not statistically significant ($p = .344$). Moreover, the mean of brand familiarity (mean = 2.727 and std. dev. = .761) under strongly negative advertisement was higher than that (mean =

2.697 and std. dev. = .684) under strongly positive advertisement. Although the fact was only directionally supported ($p = .448$), it has a significant meaning. Since the intensity of the strongly positive advertisement (mean = 1.63 and std. dev. = .67) was significantly higher than that of the strongly negative advertisement (mean = .71 and std. dev. = 1.16) ($p < .01$), the strongly positive advertisement was expected to create significantly higher brand familiarity than strongly negative advertisement according to the "intensity hypothesis for BF." The strongly negative advertisement, oppositely, created higher brand name recognition than the strongly positive advertisement (directionally). Consequently, this fact supports the "valence hypothesis" indirectly.

In sum, the "valence hypothesis for BF" was marginally supported, which predicts that brand familiarity is higher for advertisements with a negative valence than for those with a positive valence at a given level of intensity of an advertisement. The relationship between the "intensity hypothesis" and the "valence hypothesis" will be discussed in Chapter 5.

Table 17

Correlation Coefficients between the Intensity of A_{ad} and the Intensity of the Advertisement

	time			
	overall	right after ad exposure	four days later	ten days later
IA_{ad}	.39 *(p=.000)	.40 (p=.001)	.45 (p=.000)	.23 (p=.043)

* one-tail test (H_0: r <= 0)

Table 18

Differences between Correlations

Correlations	Z-value	p (two tail)
Right after ad exposure and four days later	-.32	.75
Four days later and ten days later	1.28	.20

Multiple mean comparisons were conducted to contrast mean differences for different intensity level of the advertisement. The test results are shown in Table 19. The comparisons of IA_{ad} in the adjacent categories indicated that the higher the I_{ad}, the higher the IA_{ad} is. The mean of I_{ad} in the strongly negative category was higher than that

in the weakly negative category (p = .004); the mean in the weakly negative was higher than that in the neutral category (p = .006); the mean in the weakly positive category was slightly higher than that in the neutral category (directional support); the mean in the strongly positive category was slightly higher than that in the weakly positive category (directional support).

The contrast between the negative category and neutral category indicated that the mean of IA_{ad} under negative advertisement condition was higher than that under neutral advertisement condition (p = .001). The contrast between neutral and positive category, however, received only directional support (p = .129).

In sum, the "intensity hypothesis for IA_{ad}" was well supported by the correlation and multiple mean comparisons.

Table 19

Multiple Mean Comparisons of Intensity of A_{ad} across the Level of Advertisement

level of advertisement	mean difference	std. err.	*p
strongly negative vs. weakly negative	.45454	.17009	.004
weakly negative vs. neutral	.43722	.17009	.006
neutral vs. weakly positive	-.13400	.17009	.215
weakly positive vs. strongly positive	-.06496	.17009	.351
strongly negative vs. neutral	1.61200	.17009	< .001
neutral vs. strongly positive	-.19913	.17009	.122
negative vs. neutral	.66450	.14730	.001
neutral vs. positive	-.16650	.14730	.129

Hypothesis 3d

The hypothesis 3d states that at a given level of intensity of an advertisement (I_{ad}), the intensity of the attitude toward the advertisement (IA_{ad}) is higher for advertisements with a negative valence than for those with a positive valence. This hypothesis can be called as "valence hypothesis for A_{ad}." In order to test this hypothesis, (a)

intensities of the attitude toward the advertisement (IA_{ad}) under same intensity level of advertisement (I_{ad}) but with opposite valence was contrasted, and (b) the effect of significantly more intense advertisement (positive valence) was contrasted with less intense advertisement (negative valence).

As a t-test in the pre-test indicated, there was no evidence to suggest the intensity of strongly negative advertisement (.85) was different from that of weakly positive advertisement (.64) in this experiment. Therefore, the mean value of the intensity of the attitude toward the advertisement (IA_{ad}) under strongly negative advertisement condition was contrasted with that under weakly positive advertisement.

The mean of IA_{ad} under a strongly negative advertisement condition was 1.697 and that a under weakly positive advertisement condition was .939 (Table 20). A contrast by MANOVA procedure suggested that the intensity difference (.75758) with standard error of .17009 was highly significant ($p = .000$). That is, IA_{ad} under a negative advertisement condition is higher than that under a positive advertisement condition, even if the intensities of the advertisement (I_{ad}) are same.

In the other contrast, the IA_{ad} under a strongly negative advertisement condition (1.697) was significantly higher than that under a highly positive advertisement

condition (1.004). The difference between the two IA_{ad}s (.693) with standard error of .17009 was statistically significant ($p < .001$). This was very strong evidence to support the "valence hypothesis for IA_{ad}" because IA_{ad} under strongly positive advertisement expected to create higher brand name recognition than that under a strongly negative advertisement condition. The expectation was based on the "intensity hypothesis for IA_{ad}" because the intensity of the strongly positive advertisement was significantly higher than that of strongly negative advertisement ($p < .01$).

In sum, the test results showed strong evidence to indicate the "valence hypothesis for IA_{ad}" holds. The further discussion about the relation between the "valence hypothesis for IA_{ad}" and "intensity hypothesis for IA_{ad}" will be in Chapter 5.

Table 20

Intensity of the Attitude toward the Advertisement (IA_{ad})

Level of ad	right after ad exposure	four days later	ten days later	overall
strongly positive	1.104 (.971)	.857 (.636)	1.052 (.743)	1.004
weakly positive	.961 (.434)	.935 (.760)	.922 (.773)	.939
neutral	.974 (.403)	.701 (.773)	.740 (.477)	.805
weakly negative	1.234 (.551)	1.273 (1.005)	1.221 (.517)	1.243
strongly negative	1.987 (.621)	1.779 (.735)	1.325 (.636)	1.697
average	1.252	1.109	1.052	

Hypothesis 4a

This hypothesis indicates that the intensity of the attitude toward the advertisement (IA_{ad}) decreases over time. As Table 20 indicates the mean values at each time of the measurement decreased (1.252, 1.109, 1.052). An analysis of variance was conducted to see if the decreases are statistically significant (Table 21). The analysis showed that there was no evidence to indicate the mean values of the attitude toward the advertisement were different across time because the main effect of time was

not significant (p = .297) and neither was the interaction between L_{ad} and time (p = .789).

Consequently, the directional support and the statistical insignificance suggests that the intensity of the attitude toward the advertisement tends to decrease very slowly over the given time (10 days) in the current experimental situation.

Table 21

ANOVA for the intensity of A_{ad}

Source	SS	DF	MS	F	P
level of advertisement	16.217	4	4.054	8.493	< .001
time	1.167	2	.584	1.223	.297
interaction	2.233	8	.279	.585	.789
residual	71.603	150	.477		
total	91.220	164	.556		

Hypothesis 4b

Brand familiarity (BF) is hypothesized to decrease over time. An analysis variance, where brand name recognition was the dependent variable, was performed to test the hypothesis. The main effect (nondirectional hypothesis) revealed that there was no significant difference between

the means at the three different times of measurement. Brand recognition, however, decreased from 2.709 to 2.382 after four days ($p = .03$ at one-tail directional contrast, std. error = .17553). Unexpectedly, after ten days the mean of the brand name recognition went up to 2.582. The increase was not statistically significant ($p = .18$). In all levels of the advertisement, except the strongly negative category, the brand name recognition went up although it was not statistically significant. One possible reason for the directional increase could be that subjects who answered the questionnaire in earlier stages of the experiment had mentioned the brand name to other subjects who were going to answer the questions later.

Post hoc analysis

In this part, the effect of brand familiarity (BF) was reconsidered, since the hypothesis 2b and 2c were not supported unexpectedly. Why was the brand familiarity effect on A_b not significant? One possible reason can be that the familiarity effect could affect purchase intention directly without being mediated by A_b. According to Batra and Ray (1985), familiarity is the major determinant of purchase intentions in low involvement situations. In this study, this possibility was tested by regression analyses in which brand familiarity (BF) was an independent variable and purchase intention (PI) was a dependent variable.

As Table 22 shows, brand recognition is marginally significant in two regression models. These marginal significance suggests further investigation for the relationship between PI and brand recognition with A_b. Table 23 reveals the regression models in which PI is the dependent variable and brand recognition and A_b are independent variables. The test results indicate that brand recognition is a significant variable at all times except four days after the advertisement exposure. The A_b was strongly significant at all times.

Table 22

Regression models: PI and brand recognition

time	regression	*p	R^2
overall	$Y = -1.185347 + .182264\ X_1$	.095	.011
right after ad exposure	$Y = -1.213574 + .208590\ X_1$	.225	.011
four days later	$Y = -.868681 + .054281\ X_1$	.400	.001
ten days later	$Y = -1.660240 + .344929\ X_1$	.091	.033

*one-tail test

Table 23

Regressions for Brand Recognition

Time	Regression
Overall	$Y = -1.049876 + .967025\ X_1 + .204262\ X_2$
	* (.099212) (.110054)
	** (<.001) (.033)
	$R^2 = .37632$
	$R^2 = .36862$
	Standard Error = 1.35969
	n = 165
Right after ad exposure	$Y = -1.475827 + 1.031517\ X_1 + .317263\ X_2$
	(.139188) (.193597)
	(<.001) (.054)
	$R^2 = .51892$
	$R^2 = .50042$
	Standard Error = 1.24126
	n = 55
Four days later	$Y = -.597494 + .859350\ X_1 + .068811\ X_2$
	(.177399) (.179879)
	(<.001) (.352)
	$R^2 = .31178$
	$R^2 = .28531$
	Standard Error = 1.44983
	n = 55
Ten days later	$Y = -1.492021 + 1.100077\ X_1 + .368311\ X_2$
	(.227840) (.213791)
	(<.001) (.056)
	$R^2 = .33262$
	$R^2 = .30695$
	Standard Error = 1.40777
	n = 55

where $X_1 = A_b$
X_2 = brand recognition
Y = purchase intention
* (Standard error of the coefficient)
** (p (H_0: ß <= 0))

The brand recall measurement was not significant independently but significant in the multiple regression model after ten days (Table 24 and Table 25). These results provide evidence to indicate there is a positive relationship between brand recognition and purchase intention when A_b is simultaneously considered. Therefore, it suggests that A_b and brand name recognition together affect purchase intention.

Table 24

Regression models: PI and brand recall

time	regression	*p	R^2
overall	$Y = -.806306 + .157955\ X_1$	.295	.002
right after ad exposure	$Y = -.952381 + .491597\ X_1$	.159	.019
four days later	$Y = -.555556 - .361111\ X_1$	.220	.011
ten days later	$Y = -.948718 + .339523\ X_1$	.230	.010

*one-tail test

Table 25

Regressions for Brand Recall

Time	Regression	
Overall		
	$Y = -.609269 + .962881 X_1 + .146842 X_2$	
	* (.100098)	(.214781)
	** (<.001)	(.248)
	$R^2 = .36489$	
	$R^2 = .35705$	
	Standard Error = 1.37209	
	n = 165	
Right after ad exposure		
	$Y = -.621385 + 1.013676 X_1 + .007271 X_2$	
	(.145039)	(.360020)
	(<.001)	(.492)
	$R^2 = .49408$	
	$R^2 = .47462$	
	Standard Error = 1.27291	
	n = 55	
Four days later		
	$Y = -.357559 + .850483 X_1 + -.155562 X_2$	
	(.178433)	(.393387)
	(<.001)	(.347)
	$R^2 = .31191$	
	$R^2 = .28544$	
	Standard Error = 1.44969	
	n = 55	
Ten days later		
	$Y = -.860504 + 1.146786 X_1 + .624155 X_2$	
	(.231078)	(.385715)
	(<.001)	(.056)
	$R^2 = .32835$	
	$R^2 = .30252$	
	Standard Error = 1.41226	
	n = 55	

where $X_1 = A_b$
X_2 = brand recall
Y = purchase intention
* (Standard error of the coefficient)
** (p (H_0: ß <= 0))

CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

This chapter begins with a discussion of the findings. In the section that follows, the limitations of the research are examined. Then, contributions and managerial implications are discussed. Finally, a summary is given.

Discussion of Findings

The first hypothesis centered around the relationship between the level of advertisement and the attitude toward the advertisement. It was posited that there is a positive relationship between the level of advertisement (L_{ad}) and the attitude toward the advertisement (A_{ad}). The Pearson correlation coefficients for the two constructs for the overall data indicated a relatively strong positive relation ($r = .70$). It means that if the level of the advertisement is higher, then a higher level of attitude toward the advertisement will be expected.

The positive relationship was further investigated at each time of measurement. Since the attitude toward the advertisement was measured at three different times after

the advertisement exposure, three additional correlation coefficients were computed to investigate if the positive relationship exists at each time period and if any changes occurred in the relationship during the given period of time (10 days).

The three correlation coefficients indicated that at each time period of measurement (right after the advertisement exposure, four days after the exposure, and ten days after the exposure), the positive relationship was maintained. The relationship appeared to decrease with the passage of time. Right after the advertisement exposure the relationship was the strongest ($r = .75$); four days later the relationship started decreasing ($r = .72$); ten days later the relationship has weakened significantly ($r = .59$).

This finding suggests that the attitude toward the advertisement can be well manipulated by the level of the advertisement and the manipulated attitude toward the advertisement persists over time. The effect of the level of the advertisement on the attitude toward advertisement diminishes with a passage of time. The initial effect level can be maintained for a certain period of time (about four days in this research experiment), then the effect weakens more sharply after the point in time. Figure 11 represents the changes.

A set of hypotheses within hypothesis 2 attempted to explain the effect of attitude toward the advertisement and

the brand familiarity on the formation of the attitude toward brand. Hypothesis 2a leads one to expect a positive relationship between the attitude toward the advertisement (A_{ad}) and the attitude toward the brand (A_b). Hypothesis 2a was formulated based on classical conditioning theory and expected to be significant because many studies have provided support. Particularly, since the brand name in this research was new and the product category was generally considered to be low involvement, a strong positive relation was expected. Without disappointment, all of the four simple regression models at different times of measurement revealed strong relationships. For a period of time (four days in this research experiment), the magnitude of the relation remained stable (R^2 = .541 and .645), but after then the magnitude decreased rather sharply (R^2 = .361).

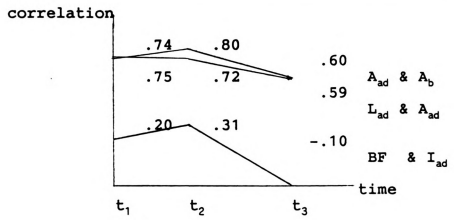
This finding confirmed the generalization between A_{ad} and A_b and disconfirmed the balance theory in explaining the relationship. In a static time, it seems that both classical conditioning and balance theory were confirmed by the results because of the significant positive relationship between A_{ad} and A_b. In a dynamic sense, however, the finding disconfirmed balance theory, though it still confirmed classical conditioning theory. According to classical conditioning, the generalization between A_{ad} and A_b tends to weaken over time due to forgetting (and extinction). On the other hand, according to balance theory, the strength of the

association should remain the same unless the balance is broken by new associations of the same constructs. Since there was no chance to see the Chowa chewing gum or to watch commercials about the gum, balance theory predicts that the three correlation coefficients between A_{ad} and A_b at different point in time should be same. This, however, was not the case.

This finding further extended the dynamic understanding of the relationship between A_{ad} and A_b. It is of interest to note that the decrease in the magnitude of the relationship does not seem to be linear. Figure 11 represents the change. It is also interesting to remember that a similar pattern was noticed in the relationship between the level of advertisement and the attitude toward advertisement in the analysis of the Hypothesis 1. Further research in the dynamic change of both relationships would open an avenue to longitudinal understanding of consumer information processing.

Figure 11

Dynamic Changes of the magnitude of the relationships



Hypothesis 2b indicated a positive relationship between brand familiarity (BF) and the attitude toward the brand (A_b). It was posited based on the mere exposure hypothesis. The hypothesis expected that increased brand familiarity may increase liking for the brand.

In order to test the hypothesis 2b, a set of regression models were also built and tested for the significance. The result, unexpectedly and rather surprisingly, none of the eight regression models (four brand recognition models and four brand name recall models) was significant.

Hypothesis 2c considered simultaneously the attitude toward the advertisement (A_{ad}) and the brand familiarity (BF) to predict the attitude toward the brand (A_b). The joint effect on the attitude toward the brand (A_b) was

tested in multiple regression models in which A_{ad} and BF were independent models. The regression models revealed that at any time of the measurement (overall, right after ad exposure, 4 days later, or 10 days later) the independent variable the brand familiarity was not statistically significant. The attitude toward the advertisement (A_{ad}), on the other hand, was highly significant at any time of the measurement. In another attempt, the interaction term between A_{ad} and A_b was included as well as the main effects. The regression analyses also suggested that A_{ad} was the only significant independent variable and neither BF nor the interaction term was significant.

This finding was unexpected because the literature suggested there would be a familiarity effect on the attitude toward brand formation. Zajonc (1968, 1980, 1986) proposed mere exposure effect and posited that the increased brand familiarity may increase liking for the brand. Obermiller's (1985) "exposure without cognition model" suggested that familiarity may create positive feeling. However, the familiarity effect was not confirmed in the current research. The effect was not confirmed even directionally because the ß coefficients in any of the eight regression models were hardly different from zero and the signs of the coefficient indicated no pattern.

Moore and Hutchinson's (1983) familiarity-based-sleeper hypothesis also predicts that over time the direct influence

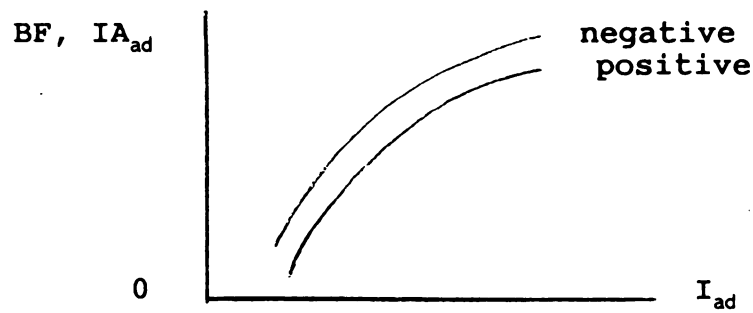
of ad affect on A_b should decay and the impact of brand familiarity should increase. In the current research, however, no increase or significant effect of familiarity effect on A_b was observed. Consequently, the familiarity-based-sleeper hypothesis was not confirmed.

On the other hand, as a post hoc analysis in Chapter Four indicates, brand familiarity as well as attitude toward the brand seems to have a direct and positive effect on purchase intention over time. Brand familiarity effect does not seem to be mediated by attitude toward the brand at any times of measurements.

The Hypothesis 3 set focused on the effect of the level of the advertisement (L_{ad}) on both of the brand familiarity (BF) and the intensity of the attitude toward the advertisement (IA_{ad}). To give the conclusion first, the test results of the hypotheses suggest that there may be a "intensity-valence effect" over time. "Intensity-valence effect" refers to a phenomenon that as the intensity of advertisement (I_{ad}) increases, the brand familiarity (BF) and the intensity of the attitude toward the brand (IA_{ad}) increase at a diminishing rate with a condition that a negative advertisement tends to have a stronger effect than a positive advertisement. The "intensity-valence effect" is represented in Figure 12.

Figure 12

Intensity-Valence Effect



The magnitude of "intensity-valence effect" seemed to be maintain same for a period of time (four days in this study), but decreases quickly after the period.

The rationale for the "intensity-valence effect" is discussed as following. "Intensity hypothesis for BF" (H3a) explains that there is a positive relationship between BF and I_{ad}. In other words, the higher the intensity of an advertisement, the higher the brand familiarity formed. This hypothesis was strongly supported by correlation coefficient analyses and multiple mean comparisons for different levels of the advertisement. Note that brand familiarity under strongly positive (negative) advertisement was only directionally higher than that under weakly positive (negative) advertisement. This fact may suggest that as the I_{ad} increases, BF increases with a diminishing

rate. Weber's law can give rationale to support this phenomenon. Weber's law describes that the smallest increase in intensity of the object that is noticeable increases as the intensity of the initial object increases.

"Intensity hypothesis for IA_{ad}" (H3c) was also supported and suggests that as the intensity of an advertisement (I_{ad}) increases, the intensity of A_{ad} (IA_{ad}) increase. Correlation coefficients and multiple mean comparisons support the hypothesis.

Regarding the effect of the valence of an advertisement (V_{ad}) on the brand familiarity (BF) and the intensity of the attitude toward the advertisement (IA_{ad}), "valence hypothesis for BF" and "valence hypothesis for IA_{ad}" were proposed. Multiple mean comparisons marginally supported "valence hypothesis for BF" and strongly supported the valence hypothesis for IA_{ad}. That is, the effect of the intensity of an advertisement (I_{ad}) on brand familiarity (BF) and the intensity of A_{ad} (IA_{ad}) is stronger when the valence is negative than when positive.

Neither of the "intensity hypothesis" or "valence hypothesis" would be completed alone because an intensity of advertisement and a valence of advertisement together make the level of an advertisement. Otherwise, each hypothesis explains only one dimension of the effect and might be misleading in some cases. For example, when the levels of two advertisements are -1 and +1, if only the "intensity

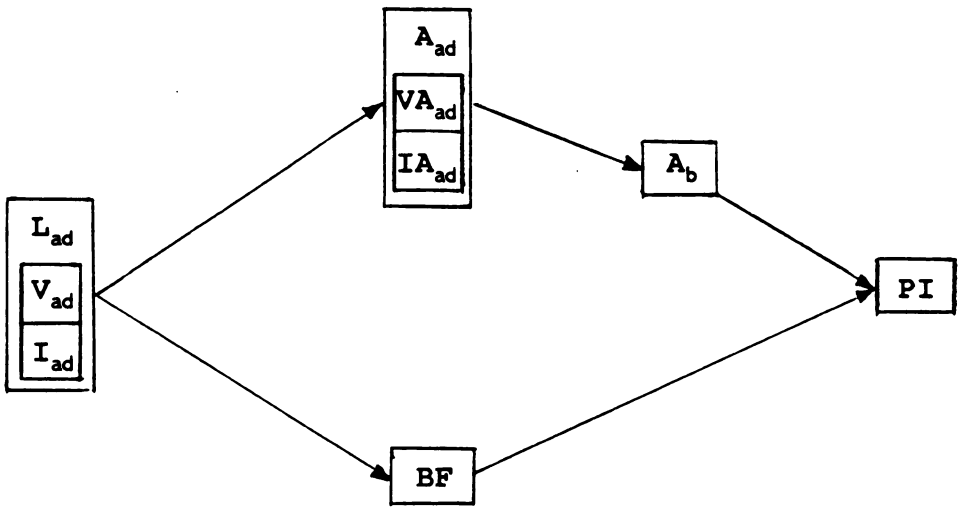
hypothesis" is applied, then the same brand familiarity and intensity of the attitude toward the advertisement are expected, which may not be true according to the valence hypothesis. For another example, when the levels of two advertisements are -1 and +3, if only the "valence hypothesis" is applied, then a higher BF and IA_{ad} is expected for the negative advertisement than for the positive advertisement, which also may not be true based on the "intensity hypothesis." To be completed, therefore, the intensity effect and the valence effect are integrated, and "intensity-valence effect" is suggested. The definition of the effect was given earlier.

Hypotheses 4a and 4b predicted a decrease of the intensity of attitude toward the advertisement (IA_{ad}) and brand familiarity over time. The test results only gave only directional support.

Consequently, all of the above findings together suggest an affective information processing model. This model explains that "intensity-valence effect" affects the positive relationships between L_{ad} and A_{ad}, and between L_{ad} and BF; there is a positive relation between A_{ad} and A_b; A_b and BF jointly provide positive relationships with PI. Figure 13 represents the proposed affective information processing model.

Figure 13

Proposed Affective Information Processing Model



Limitations of the Research

As with most experimental research, this study has a limitation in external validity. Since the experiment was conducted in classrooms and the subjects had to come only for the experiment, the ad-watching environment could be different from the natural or real-world watching environment. In order to reduce this external validity problem, three attempts were made. First, the advertisements were produced by professionals. A professional artist designed the logo and package design of the product and combined background pictures with the

package of gum; a professional photographer transformed the advertisements into slides; an audio professional edited the background music in the slide show narration tape. Second, the advertisements were embedded in a slide show. This method is considered to be superior to another method in which subjects watch only commercials in a laboratory. Last, the subjects were not informed about the purpose of the study. They simply were told to watch a slide show.

Another limitation is in the sampling process. Using student sampling offers convenience but also limits the generalization of the result to real world. The limitation is not critical in this research, though, because the main purpose of the research is not to generalize the result to real population, but to understand theoretically how consumer information processing occurs. Rather, this convenient sample was beneficial in controlling the experiment because the students were relatively homogeneous.

Finally, since this experiment was conducted over ten days and some subjects finished the questionnaire earlier than others, if anyone discussed the research questionnaire with subsequent participants the answers could be biased. In particular, the reliability of the brand name recognition and recall measurement would suffer if the subjects knew the questions before hand. An attempt was made to reduce this possibility. The written questionnaire directions did request participants to not discuss the questionnaire with

anyone.

Managerial Implications

The findings in this research suggest several managerial implications. These implications can be applied mostly to a new or unfamiliar product under a low involvement condition.

First, brand familiarity as well as attitude toward the advertisement are important factors. When a product is introduced, advertising managers should attempt to increase brand familiarity as well as the attitude toward the brand through the attitude toward the advertisement.

Second, when the effect of an advertisement is measured, it is desirable to measure and analyze both of the attitude toward the brand and brand familiarity (brand recognition).

Third, when brand familiarity is measured to predict purchase intentions, brand name recognition seems to be a better measurement than unaided brand name recall. It is because of the research result that brand name recognition was a significant variable in predicting purchase intention, whereas unaided brand name recall was not.

Fourth, since the intensity and valence of advertisement are found to be important, the "intensity-valence effect" can be applied to create a desirable

advertisement level. When frequent advertisement repetition is not available, advertisement with strong intensity may be effective. Advertisement with negative valence can be effective in achieving brand familiarity.

Fifth, a manager needs to understand the dynamic change of an advertisement effect. As a research finding suggests, if the magnitude of the advertisement effect persists for a period of time, without loosing too much effectiveness, less frequency could be cost effective.

Future Research

Future research is needed to confirm the "intensity-valence effect" in different settings. The effect was fairly well supported in this study. However, the effect may be situation specific. More replication studies and retesting of the effect in different settings are desirable.

Future research needs to be directed toward a better understanding of the effect of brand familiarity. Even if the current study suggests that brand familiarity affects purchase intentions directly, a clearer understanding is needed. The new research could attempt to answer the following questions. Why, in this research, did brand familiarity not have a relationship with the attitude toward the brand which was contrary to what literature suggested? Can brand familiarity directly affect the behavior? Does

brand familiarity have a more important role when a consumer has to evaluate some alternative products (relative comparison) than to evaluate a product likeness (absolute measurement)?

A stream of research on the dynamic changes of advertising effect would be of interest and make important theoretical and managerial contributions.

Finally, research can be done to confirm the whole model suggested by the current study in the context of causal structure. The relationship among the constructs (L_{ad}, A_{ad}, BF, A_b, and PI) can be retested by considering each relationship simultaneously. LISREL or PACKAGE could be used.

Summary

This study has contributed to a better understanding of consumer information processing. In an attempt to explain the role of an advertisement in the formation of the attitude toward the advertisement and brand familiarity, the "intensity-valence effect" was suggested as the result of integrating supported hypotheses. The "Intensity-valence effect" explains that as the intensity of advertisement (I_{ad}) increases, the brand familiarity (BF) and the intensity of the attitude toward the brand (IA_{ad}) increase at a diminishing rate with the condition that a negative

advertisement tends to have a stronger effect than a positive advertisement. The magnitude of the "intensity-valence effect" seems to be maintain same for a period of time, then it seems to decrease quickly.

It was confirmed that the attitude toward the advertisement (A_{ad}) has a positive relationship with the attitude toward the brand (A_b). The strength of the relationship persisted for a period of time but after additional time it weakened rather sharply.

No evidence found that brand familiarity (BF) has a positive relationship with the attitude toward the brand (A_b). Brand familiarity, rather, seems to have a significant effect on purchase intentions directly in conjunction with the attitude toward the brand.

This study provided some understanding of how consumer information is processed. The new understanding, however, only raises new questions.

APPENDICES

APPENDIX A

RESEARCH CONSENT FORM

RESEARCH CONSENT FORM

With regard to my participation in research:

1. I understand that participation is voluntary and not required as part of course requirements. I agree to sign up for a study ONLY WHEN I FULLY INTEND TO PARTICIPATE.

2. I understand the procedures by which my participation will count for some form of credit in the class listed below and an alternative way to earn class credit is available.

3. I understand that any credit I may earn via participation in research is not transferable to another class or another term.

4. I understand that, apart from my participation in a given study, my actual performance in that study will in no way affect my evaluation in a given course.

5. I understand that the data will be collected anonymously.

6. I understand that the data I provide a researcher as a result as a result of my participation in a given study may be used by other scientists for secondary analysis. Again data will be treated with the strict anonymity.

7. I understand that the participation involves attending two sessions and the total time required will be around 30 minutes.

8. I understand that should I have any questions, problems, complaints, or I desire further information, I have the right to contact the Research Coordinator.

Given these understandings, I have freely consented to participate in scientific research being conducted during this term.

Signed _____
Date _____
Name (Print) _____
Student Number _____
Class _____MTA317_____
Section _____
Time Class Meets _____
Teaching Assistant's Name _____

APPENDIX B

QUESTIONNAIRE

Thank you very much for your participation. Your sincere answers will be very important for a research project at MSU.

INSTRUCTIONS

1. Please read instructions for each question carefully.
2. Please answer every questions.
3. If you have any questions, please raise your hand.
4. Please do not discuss this questionnaire with anyone after you answer.
5. Do not write your name on this questionnaire.

1. Place a mark on the position between each adjective pair which best describes your opinion about the slide show (Getting Ready To Ride) as a whole.

Example: bad ___:___:___:___:___:_X_ good

dislike ___:___:___:___:___:_X_ like

not irritating _X_:___:___:___:___:___ irritating

interesting ___:_X_:___:___:___:___ boring

favorable _X_:___:___:___:___:___ unfavorable

unenjoyable ___:___:___:___:___:_X_:___ enjoyable

pleasant _X_:___:___:___:___:___:___ unpleasant

bad ___:___:___:___:___:___:___ good

dislike ___:___:___:___:___:___:___ like

not irritating ___:___:___:___:___:___:___ irritating

interesting ___:___:___:___:___:___:___ boring

favorable ___:___:___:___:___:___:___ unfavorable

unenjoyable ___:___:___:___:___:___:___ enjoyable

pleasant ___:___:___:___:___:___:___ unpleasant

2. You have seen a few times of an advertisement during the slide show (Getting Ready To Ride). Please recall the brand name that appeared in the advertisement.

_____

(Please do not go to next page until you answer the question on this page. Once you go to the next page, you must not return to this page in order to change your answer.)

3. Regarding the advertisement in the slide show (Getting Ready To Ride) you have watched, how much the following brand names are familiar to you?

Chuncha:

definitely familiar ___:___:___:___:___:___ definitely unfamiliar

Chingwe:

definitely familiar ___:___:___:___:___:___ definitely unfamiliar

Chowa:

definitely familiar ___:___:___:___:___:___ definitely unfamiliar

Waddsha:

definitely familiar ___:___:___:___:___:___ definitely unfamiliar

(Please do not go to next page until you answer the question on this page. Once you go to the next page, you must not return to this page in order to change your answer.)

4. Place a mark on the position between each adjective pair which best describes your opinion about the chewing gum "Chowa".

bad ___:___:___:___:___:___:___ good

dislike ___:___:___:___:___:___:___ like

favorable ___:___:___:___:___:___:___ unfavorable

enjoyable ___:___:___:___:___:___:___ unenjoyable

useless ___:___:___:___:___:___:___ useful

low quality ___:___:___:___:___:___:___ high quality

beneficial ___:___:___:___:___:___:___ harmful

5. Place a mark on the position between each adjective pair which best describes your overall reaction to the chewing gum "Chowa" advertisement in the slide show (Getting Ready To Ride) that you have watched.

bad ___:___:___:___:___:___:___ good

like ___:___:___:___:___:___:___ dislike

irritating ___:___:___:___:___:___:___ not irritating

interesting ___:___:___:___:___:___:___ boring

favorable ___:___:___:___:___:___:___ unfavorable

enjoyable ___:___:___:___:___:___:___ unenjoyable

pleasant ___:___:___:___:___:___:___ unpleasant

6. Please circle around one of the words to complete the following sentence.

The advertisement of the chewing gum "Chowa" in the slide show (Getting Ready To Ride) is overall a ( ) advertisement.

|---------|---------|

negative neutral positive

7. If you answered in question #7 as either negative or positive, then how strongly do you think so? (If your answer was neutral, then you don't have to answer this question #7.)

|---------|

Weak Strong

8. Place a mark on the position between each adjective pair which best describes the likelihood that you will purchase the chewing gum "Chowa" in the future.

improbable ___:___:___:___:___:___:___ probable
likely ___:___:___:___:___:___:___ unlikely
possible ___:___:___:___:___:___:___ impossible

9. Have you heard the brand name of chewing gum "Chowa" before watching the slide show (Getting Ready To Ride)?

_____	_____	_____	_____
never	one or two times	a few times	many times

10. During the slide show (Getting Ready To ride), I paid attention :

More To the Program ___:___:___:___:___:___:___ More To the Advertisement

11. Finally, please answer the question below.

I am _____ years old.

I am a _____ male, _____ female.

I am a _____ freshman
_____ sophomore
_____ junior
_____ senior
_____ graduate
_____ other.

Thank you very much for your cooperation in completing this questionnaire.

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Table x
Attitude toward the advertisement

Level of ad	right after ad exposure	four days later	ten days later	overall
strongly positive	1.104 (.971)	.805 (.706)	-.117 (1.315)	.597 (1.130)
weakly positive	.831 (.666)	.156 (1.230)	-.636 (1.043)	.117 (1.150)
neutral	-.039 (1.097)	-.260 (1.032)	-.481 (.759)	-.260 (.961)
weakly negative	-1.234 (.551)	-.779 (1.457)	-.571 (1.244)	-.861 (1.149)
strongly negative	-1.987 (.621)	-1.779 (.735)	-1.039 (1.071)	-1.602 (.905)
average	-.265	-.371	-.569	

* The numbers represent mean values of A_{ad}.
** The numbers in the parentheses represents standard deviations.