

ANIMATED COMMERCIALS' EFFECTS ON LOW-EFFORT ROUTES TO
PERSUASION: CLASSICAL CONDITIONING APPROACH

By

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ChangHyun Jin

I dedicate this dissertation to my parents, Jeong-Ho Jin, Pan-Soon Kang who have made me what I am.

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It was a long way to be Dr. Jin. It was a great opportunity to start a new challenge in my life. It was not the end but just the beginning to pursue the endless knowledge. To be continued to open a new door of advertising area...

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The motivation of the study was to examine the effects of animation and its relationship to human cognitive and affective processes by categorizing the different types of animation and live action featured in television commercials. This study also assessed the impact of animation in commercials through a series of classical conditioning experiments. A 3 (types of commercials (clay, cartoon and real human based commercials) x 2 (degree of involvement: high versus low) between-subjects factorial design was employed on dependent variables in the first experiment.

A 2 (experimental vs. control group) x 2 (high versus low involvement with the product) between subjects factorial design was performed on two different conditions on linear combinations of all dependent variables in the second experiment. In this experiment, advertised products have been treated as a conditioned stimulus while the different types of animation have been treated as potential unconditioned stimuli.

This study significantly contributes to our understanding of the relationship between animated commercials and human cognitive and affective processing. Animated commercials can more effectively provide visual demonstrations and recall testimonies for products. Also implication from this study is that animated ads should take into account the influence of lower-level peripheral processing routes on viewer persuasion.

This study demonstrated that awareness leads to favorable perception of the ad about the target attribute and favorable brand attitudes. The experiment in this study re-examined the degree to which awareness of the CS/US contingency plays a role in classical conditioning. The result of this study was that awareness is enhanced by involvement. In addition, involvement influences attitude formation through classical conditioning procedures with affect and belief formation acting as mediators. The study demonstrated benefits of the effective animated advertising stimuli. Through evidence for classical conditioning experiment, it can be provided the opportunity to better understand how classical conditioning can be used as a framework for affecting attitude toward the brand. The study confirmed that the classical conditioning method would be more effectively working under the low level personal relevant involvement toward the stimuli.

Understanding the relationship between animated commercials and how they stimulates viewers or effect their emotional responses and behavioral expectations, provides valuable information to practitioners who designs animation ads when they create effective animated commercials. Animation has become an important design tool in recent graphic interfaces because they motivate consumer actions and draw viewers' attention to specific product features.

CHAPTER 1 INTRODUCTION

Animation has become the new creative advertising trend in today's entertainment industry. As a character-based business, animation can expand the design of advertisements by applying digital content to different media, such as the Internet, mobile phone technology, and television. However, little research has been conducted on animated ad and animated characters as spokespersons that identifies whether or not they prove more effective at building consumer awareness about a product or service (Bush., Hair, & Bush 1983; Callcott & Lee 1994; Van Auken & Lonial 1985). Some research suggests that animated commercials can effectively provide visual demonstrations and verbal testimonies for a wide variety of products (Callcott & Lee 1994), while studies on motion (Detenber & Reeves 1996; Detenber, Simons, & Bennett 1998; Sundar & Srirani Kalyanaranman 2004) have focused on the relationship between size and speed and emotional response, as well as explored animated objects on the Internet.

The classical conditioning paradigm (Pavlov, 1927) has been widely applied to the field of consumer behavior. Many researchers have studied its implications on consumer behavior, and it has been adopted as a process relevant to advertising (Allen & Janiszewski 1989; Allen & Madden 1985; Bierley, MacSweeney, & Vannieuwkerk 1985; Gorn 1982; Janiszewski & Warlop 1993; Nord & Peter 1980; Priluck & Till 1998, 2004; Rossiter & Percy 1980; Shimp et al. 1991). Classical conditioning suggests that positive attitudes towards an advertised product (conditioned stimulus) might develop through a product's association in a commercial with other positive stimuli (unconditioned stimuli).

Attractive colors, pleasant music, and humor are examples of potential unconditioned stimuli used in commercials (Gorn 1982, p.94). Bierley et al. (1985) reported that generalization of the conditioned response to other, similar stimuli is typically found in classical conditioning experiments (p. 317). Thus, a classical conditioning paradigm could be of use when discussing animated commercials as a new form of stimuli.

Purpose and Design of Study

Given the little previous research on animation, this remains a relatively new genre in advertising design. This study aims to examine the effects of animation and its relationship to human cognitive and affective processes by categorizing the different types of animation featured in television commercials. Furthermore, the motivation of this paper is to gain a better understanding of how animation and the animated advertisement influence cognition, affection, and conation responses.

Psychological studies on advertising and emotional responses typically identify the form and content of advertisements as critical factors in research. The majority of research on the effects of advertising note that it does influence cognitive and affective processes, but limited research exists on the cognitive and affective results of animated ads. In addition, previous research focused primarily on content analysis, and some studies attempted to examine the effects of animation on consumers. Combining these focuses would yield a tripartite study on the animated ad and its relationship to consumer attitudes. This study will begin with a closer look at each of these variables to better explain this paper's hypothesis regarding the relationship between animated commercials and how they stimulate viewers or affect their emotional responses and behavioral expectations.

In this experiment, advertised products (products selected electronic products and soft drink goods, or different brands of electronic products and domestic goods) have been treated as conditioned stimuli while the different types of animation have been treated as potential unconditioned stimuli. This study will assess the impact of animation in commercials through a series of classical conditioning experiments.

CHAPTER 2 LITERATURE REVIEW

2.1 Historical Review of Animation

Theatrical cartoons appeared on television as early as 1930 and animated cartoons emerged by the early 1940s because of production costs. In this period, animation was frequently seen on TV as a non-commercial, experiment medium. By that time, producers were trying to exercise a great deal of creative control on the animated genre (Cohen 1992). By the end of 2004, the world animation market was valued at US \$24 million (NASSCOM 2002 Report).

Roncarelli (2001) estimated the total value of global commercial computer animation production at \$25.4 billion in 1999, and the industry continues to exhibit relatively strong growth. This growth has occurred in advertising, movies, broadcasting, design engineering, games, location-based entertainment, and the Internet. Simon (2006) stressed that “animation offers advertising clients a powerful tool: The opportunity to showcase a product or service via a detailed virtual tour on the Internet.” (p. 25) For instance, FCB and the production company Perceptual Engineering recently merged live action and animation in a mental health awareness campaign highlighting the issues surrounding depression. This blended approach was seen as an effective way of getting inside people’s heads (Simon 2006, p.28).

Animation, which offers entertainment as a form of visual art, has evolved into a character-based business with the potential to expand its base by offering digital content to media such as the Internet and mobile phones. In addition, the animation market has

potential benefits, including the production of animated TV shows and movies, video title sales, and merchandise sales featuring animated characters. The advent of advanced technology in the 21st century has led to more developed computer graphics that allow animation to extend into computer games, TV commercials, and blockbuster films.

Originally, animation terminology referred to its medium as a means of creating a complete re-presentation of reality because animation can create the true nature of what we are seeing in movies and TV because of its ability to fill the gaps when reality simply doesn't look real enough. Animation is the process of linking a series of slightly different drawings together to simulate movement (Wilson 2005). Animation can be recognized as it means to be produced the world beyond all imagination. Many advertising practitioners have recognized animation as a new advertising design tool and a form of visual art in the current entertainment industry. Clay animation referred as the animation of figures created by plasticine, clay, or other malleable materials (Frierson 1994; Furniss 1998). And now clay animation very often appears in movies and commercials, as well. Regarding the current entertainment industry, use of clay animation on movie has been rapidly increasing. For instance, boxofficemojo.com reported that the movie "Shrek (2001) and Shrek 2(2004) had grossed over total amount of 1.405.074.876 (i.e., shrek 1 \$484,409,218 and Shrek two \$920,665,658)."

2.2 Animation and Peripheral Processing Routes

After the creation of the Elaboration Likelihood Model (Petty & Cacioppo 1986), many researchers explored the central and peripheral processes of persuasive communications. The specific product information provided in advertisements typically follows a central processing route, since the viewer puts more effort into hearing the

features and benefits of a product. Different types of affective stimuli (e.g., background music, pleasant visual scenes, characters, and images) in an advertisement follow a peripheral processing route, as these elements require less cognitive effort on the viewer's part. Because animated stimuli rely heavily on these more aesthetic factors, research on animated ads should note the influence of lower-level peripheral processing routes on viewer persuasion.

Central processing involves comprehending and learning the arguments in a persuasive message, the generation of cognitive responses while listening to the message, and the combination or integration of this (and other) information into an attitudinal judgment. In contrast, peripheral processing focuses on the rewards or punishments associated with a message and the attractiveness or credibility of the source. The peripheral route also refers to simple affective mechanisms of attitude change, such as classical or operant conditioning (Fishbein & Middlestadt 1995, p.255).

A variety of processes are supposed to influence attitudes without the necessity of comprehensive or analytical thought about the attitude object. These processes also operate when motivation or the ability to think is lacking. It is possible that the lowest level of elaborative thinking would correspond to processes that represent "mere associations" between the attitude object and some other positive or negative cognitive element. Other relatively low-thought processes involve simple inferences about the attitude object, but often on the basis of information peripheral to the qualities of the attitude object (Wegener & Carlston 2005, p.534).

Hoyer and MacInnis (2001) noted that people tend to view commercials passively, since the information provided requires less motivation to process. Thus, given

their emphasis on attractive or likable characters and motion, humor, and pleasant music, it is critical to analyze how animated commercials affect consumer attitudes via peripheral processing routes. It is also important to apply the classical conditioning mechanism to studies on animated ads and examine the role of animated stimuli on consumer-attitude formation.

2.3 Classical Conditioning

Classical conditioning has long been employed in the study of consumer behavior (Bierley, MacSweeney, & Vannieuwkerk 1985; McSweeney & Bierley 1984; Nord & Peter 1980) and as a means of interpreting the effects of advertising, such as attitude changes (Janiszewski & Warlop 1993; Priluck & Till 1998, 2004; Rossiter & Percy 1980). Classical conditioning is considered a prime method of persuasion (Petty & Cacioppo 1996), as considerable research has demonstrated its effectiveness (Allen & Janiszewski 1989; Allen & Madden 1985; Gorn 1982; Kim, Allen, & Kardes 1996; Stuart, Shimp, & Engle 1987; Shimp, Stuart, & Engle 1991) as well as its ubiquity in advertising and promotion (Eagly & Chaiken 1993; Shimp 1991).

In a classical conditioning paradigm (Pavlov 1927), a conditioned stimulus (CS) and a motivationally significant unconditioned stimulus (US) are paired. As a result of this pairing, the original CS elicits a response, which is the conditioned response (CR), that it did not elicit prior to the association with the US. Conditioned responses are expressions of non-declarative forms of memory. While they can be conscious themselves, such responses are elicited without consciously accessing any memory content (Clark & Squire 1998).

In advertising research, classical conditioning is an effective method for developing favorable attitudes toward a brand that are retained long enough to be accessible at the time of purchase (Priluck & Till 1998, p.28). The use of favorable images to condition consumer responses to brand names is established in previous marketing literature. Speed and Thompson (2000) argued that classical conditioning research in advertising suggests that the size of the conditioned response will depend on (a) respondents' attitudes toward the unconditioned stimulus, or the advertisement (Mitchell & Olsen 1981; Shimp 1981); (b) respondents' prior attitudes toward the conditioned stimulus, or the brand being advertised (Stuart, Shimp, & Engle 1987); and (c) respondents' perceptions of congruence between the unconditioned and conditioned stimulus, or the advertisement and the brand being advertised (Mitchell, Kahn, & Knasko 1995; Shimp 1991). Hence, the purpose of this study is to generate attitudes toward brands featured in animated ads through classical conditioning procedures.

Classical conditioning is also a means of influencing consumer attitudes without invoking much cognitive processing effort. According to Pavlov's study, food acted as an unconditioned stimulus (US), and the dog's salivation response to the food was the unconditioned response (UR). A stimulus is considered "unconditioned" because it automatically elicits an involuntary response. In other words, the dogs could not help but salivate when they saw the meat powder. In contrast, a conditioned stimulus (CS) does not automatically elicit an involuntary response alone. Thus, until Pavlov paired the food with the bell, the bell alone was not capable of making the dogs salivate. Repeatedly pairing the conditioned stimulus (the bell) with the unconditioned stimulus (the meat powder) automatically elicited the involuntary unconditioned response (salivation).

However, over time salivation became a conditioned response (CR) to the sounding of the bell alone. In another illustration of this phenomenon, many cat owners have noticed that their cats usually come running at the sound of the can opener being used. This behavior occurs because the noise of the can opener has been repeatedly paired with regular feedings (Hoyer & MacInnis 2001).

Mitchell and Olsen (1981) also found that the same conditioning effect appears to determine attitudes when nonverbal information is presented in advertisements. Thus, advertisements that associate a brand with a nonverbal affective cue transfer the affect to the brand itself over time. This involves spontaneous communication; syncretic cognition is altered by changing the affect associated with the product through the use of emotional cues in the advertisement. Moreover, electronic media may be especially adept at classical conditioning strategies that produce syncretic cognition, since electronic media abound in spontaneous nonverbal emotional cues (Chaudhuri & Buck 1995, p. 112).

Positive attitudes toward an ad become associated with the brand itself and eventually become part of the brand. This result can take place in the total absence of analytic cognition or beliefs, since product information was kept at a minimal level in the experiment. Chaudhuri and Buck (1995) argued that classical conditioning strategies in advertising commonly use spontaneous nonverbal cues, such as music, which generate syncretic cognition. Some of these spontaneous nonverbal cues, such as music and sound effects, are available only in electronic media. We suggest that this is a second reason why, relative to print media, electronic media emphasize syncretic cognition. Moreover, it has been found that music in television commercials has a distracting effect during analytic cognitive situations (Park & Young 1986). Therefore, the lack of cues like music

in print media may encourage analytic cognitive responses, at least in comparison to electronic media (Chaudhuri & Buck 1995, p.113)

Gorn's (1982) study examined the impact of music in advertising on consumer-choice behaviors through the application of a classical conditioning model. Classical conditioning suggests that positive attitudes towards an advertised product (conditioned stimulus) might develop through the product's association with other stimuli that consumers relate to positively (unconditioned stimuli). Attractive colors, pleasant music, and humor act as the potential unconditioned stimuli in commercials (Gorn 1982, p.94).

Previous research on product preferences asserts that the background features used in commercials were only related to product preferences when minimal product information was presented. The impact of advertised product information on beliefs and attitudes would typically be interpreted within an information-processing framework. It is suggested here that a classical conditioning model could account for the potential impact of background features on product attitudes. In fact, classical conditioning could explain the effect of many variables on changes in consumer attitudes. For example, the effect of communication may be related to a viewer's association of the attitude object with a positive attitude toward the communicator.

Many have emphasized that such hedonic associative mechanisms seem to work through the principle of higher-order classical conditioning wherein an unconditioned stimulus (some component of advertising copy) that elicits an unconditioned response (positive pleasurable emotions) is repeatedly paired with a conditioned stimulus (the brand name) until the conditioned stimulus alone elicits the unconditioned response (favorable emotions toward the brand) (Fishbein & Ajzen 1975; Petty, Cacioppo, &

Schuman 1983; Shimp 1981). In the case of arousal, an emotional appeal might associate the product with a desired state of vitality and liveliness while avoiding the extremes of sluggishness or over-stimulation (Holbrook & O'Shaughnessy 1984, p.55).

In marketing, classical conditioning is often mentioned and generally accepted as a process relevant to advertising (Engel, Blackwell, & Minard 2001). However, little empirical research exists on whether or not consumer preferences for products can actually be classically conditioned. In psychology, where classical conditioning has been investigated more extensively, there is insufficient evidence to support that attitudes can be classically conditioned (Brewer 1974; Fishbein & Ajzen 1975). In addition, the limited popularity of classical conditioning may be due to several difficulties associated with typical conditioning experiments. Shimp (1991) mentioned that effective conditioning should involve awareness of the relationship between the conditioned and unconditioned stimuli. Studies on classical conditioning are important to discovering the role of awareness in classical conditioning, and by noting that effective conditioning can occur through direct affect transfer or through cognitive belief information.

2.4 The Role of Contingency Awareness

Priluck and Till (2004) defined contingency awareness as “the state of the individual’s learning that the conditioned stimulus (CS) precedes the unconditioned stimulus (US) as he or she is exposed to classical conditioning trials” (p.299). Allen and Janiszewski (1989) referred to contingency awareness as repeated exposure to a CS/US combination that results in subjects learning that the presence of a particular US is contingent upon the presence of a specific CS (p.32).

Until recently, psychologists and consumer researchers have attempted to investigate the role of contingency awareness. Eagly and Chaiken (1993) argued that information-based explanations of the effects of classical conditioning procedures on attitudes were based primarily on the assumption that awareness of the CS/US contingency was necessary for conditioning effects to occur (p.410). Contingency awareness could be a consequence of conditioning as well as the product of a deliberate cognitive process (Eagly & Chaiken 1993, p.410).

Kim et al. (1996) found that awareness leads to positive beliefs about the target attribute and favorable brand attitudes, suggesting a dual mediation model in which awareness plays a central role. They suggest that the acquisition of both affect and beliefs in attitude formation could be fostered by awareness. According to Shimp (1991), awareness exists when subjects realize that a CS and a US have a temporal relationship in an experimental sequencing. Many studies on awareness argue that it is a requirement for effective attitude formation via the conditioning process (Allen & Janiszewski 1989; Shimp et al.1991). Researchers who study classical conditioning assert that cognitive factors explain classical conditioning when human subjects are used. These researchers also investigated whether or not conditioning can occur in humans without awareness. The experiment in this study examines the degree to which awareness of the CS/US contingency plays a role in classical conditioning.

2.5 The Influence of Involvement on Awareness

Involvement issues have been studied in consumer behavior fields (Greenwald & Leavitt 1984; Homer & Kahle 1990; Laczniak, Muehling, & Grossbart 1989; Zaichkowsky 1985). Macinnis and Park (1991) found that certain executional cues (e.g.,

pictures, source characteristics, music, and message sidedness) may influence central-route (message based) and peripheral (non-message based) processing of both high-and low-involvement consumers. Individuals who are highly involved with a stimulus have a greater tendency to pay attention to the stimulus (Celsi & Olson 1988; Greenwald & Leavitt 1984; Lord & Burnkrant 1993), and higher levels of attention to the stimuli in a conditioning experiment may result in contingency awareness.

Gorn's (1982) study suggests that individuals who are highly involved with objects are less likely to respond to music as the unconditioned stimulus than to the information provided regarding the product. People who are highly involved with objects are more likely to develop favorable attitudes when exposed to conditioning procedures in the absence of product information. Gorn also found that involvement alone may or may not be strong enough to lead to awareness.

Priluck and Till (2004) pointed out that awareness is the central variable through which attitudes are conditioned, and awareness is enhanced by involvement. In addition, involvement influences attitude formation through classical conditioning procedures with affect and belief formation acting as mediators (p.330). In information-processing theory, motivation and processing ability interact to heighten processing levels (MacInnis & Jaworski 1989), leading to awareness and positive consumer attitudes. Certain cues acting as affective stimuli may influence consumers' brand attitudes, thus enhancing message processing (Petty & Cacioppo 1986).

2.6 ELM and Involvement Issues

In the (ELM) elaboration likelihood model, Petty and Cacioppo (1986) identified or classified the type of central cognitive processing involved in consumer product

evaluation, that attitude formation or change results from a consumer's careful attempts to comprehend and evaluate the brand-relevant content of an ad and to integrate this new information with their prior knowledge into a coherent and reasoned opinion about the brand. On the other hand, peripheral processing is described as happening when consumers use peripheral factors, such as their feelings about quality of the ad, the source of the ad, or their current mood state, as cues to help them decide how they feel about the advertised brand (Mackenzie & Spreng 1992, p.519).

Some scholars noted that attitudes based on direct behavioral experience have necessarily evolved from a thoughtful elaboration of self-generated information that is likely to be clear, involving, and accessible. By contrast, attitudes based on indirect experience (i.e., information from others) are less likely to have been extensively elaborated upon and, thus, are probably less clear, involving, or accessible than those based on direct experience (Mackenzie & Spreng 1992, p.678).

The ELM predicts change in attitude toward an advertised brand where an attitude refers to a global evaluation of the brand. One is the central route, along which the consumer changes his attitude on the basis of elaboration on arguments. The other is the peripheral route, along which the consumer may change their attitude on the basis of a variety of processes-through, for instance, heuristic inferencing of brand quality from message elements, through association of message elements with the brand, or through mere exposure to the brand.

According to Garder (1985), the consumer's processing "set" during exposure to the advertisement possibly mediates the effects of A_{ad} on brand attitudes. An individual's motivation and ability to process message information influence express themselves over

neural processing routes, which are the elaboration likelihood model versus peripheral processing (Cacioppo and Petty 1985; Gardner 1985).

In connection with consumer psychology, influencing brand attitudes, peripheral cues such as attitude toward the ad, source credibility or attractiveness and others may also influence the degree of central processing (Mackenzie & Spreng 1992, p.519).

According to Mackenzie and Spreng (1992), “when applied to an advertising context the ELM suggests that, as a consumer’s motivation to centrally process brand-relevant aspects of advertisement increases, the impact of central processing on brand attitudes should increase, the impact of peripheral processing on brand attitudes should decrease, and the impact of brand attitudes on purchase intentions should increase.” (p.519)

The term “involvement” has been used to identify the process by which motivation moderates the link between ad exposure, processing, and the attitude-formation process (Krugman 1965). Krugman (1965) proposed that television is a low involvement medium, producing its effects by repetition, as opposed to a high involvement medium like print, which produces relatively enduring changes in beliefs. Petty and Cacioppo (1986) termed these effects as peripheral and central routes to persuasion, respectively. In contrast to Krugman’s characterization of television as a low involvement medium, McLuhan (1964) argued that due to its barrage of visual and auditory images television is a higher involvement medium than print media. Chaudhuri & Buck (1995) addressed the question of how these diametrically opposed views of involvement of television versus print be reconciled.

Batra and Ray (1983) defined involvement as the depth and quality of cognitive processing, while Mitchell (1979) defined it as an individual level, internal state variable whose motivational properties are evoked by a particular stimulus or situation. In addition, Johnson and Eagly (1989) defined involvement as a motivational state induced by an association between an activated attitude and the self-concept (p. 290). Johnson and Eagly (1989) went on to classify three different types of involvement, which include value-relevant, impression-relevant, and outcome-relevant involvement.

First, value-relevant involvement refers to the psychological state created by the activation of attitudes that are linked to important values (Johnson & Eagly 1989, p. 290). Impression-relevant involvement characterizes the persuasion settings that make salient to subjects the self-presentational consequences of their post-message positions (Johnson & Eagly 1989, p. 292). Finally, outcome-relevant involvement makes salient to message recipients the relevance of an issue to their goals or desired outcomes (Johnson & Eagly 1989, p. 292).

Levin, Nichols, and Johnson (2000) suggest that outcome-relevant involvement generally leads to relatively objective, unbiased message processing; value-relevant involvement leads to biased or reduced message processing; and impression-relevant involvement leads to social information processing. These classifications should help researchers and practitioners better understand how to motivate the type of processing that best suits their needs and why persuasion attempts often fail (p.190).

Zinkhan and Muderrisoglu (1985) noted that the higher a person's involvement in and familiarity with a product and the higher their ability to cognitively differentiate between the product's features, the higher the recall would be of the

contents/characteristics in the product's advertisement (p. 356). One definition of involvement identifies it as a psychological/internal state of commitment (Mitchell 1979, 1981) that is activated by a certain stimulus in a given situation (Cohen 1983). If activation of this internal state is high (possibly caused by a greater degree of attention to a particular stimulus), then subsequent memory performance and recall should also be high (Zinkhan & Muderrisoglu 1985, p.356). Therefore, high involvement conditions due to comprehension and elaboration should also lead to a better recall of message characteristics (Zinkhan & Muderrisoglu 1985, p.356).

Greenwald and Leavitt (1984) identified four distinct levels of involvement: pre-attention, focal attention, comprehension, and elaboration. The lowest level, pre-attention, uses little attentional capacity. This level is akin to hearing an advertisement on the radio and yielding little to no awareness or interest and absolutely no retention of the message. As attentional capacity increases and a person engages in more complex message analyses, the level of involvement increases to focal attention where attends to superficial message features such as sensory information. The next involvement level is comprehension, where the message begins to provide a context within which the recipient can search for relevance. The highest level, elaboration, is analogous to the unique processing that occurs in encoding self-relevant information.

According to the ELM, people are likely to process information differently depending on their level of involvement with the message. Attitudes are affected by the central processing route under high-involvement conditions, or when people make a cognitive effort to evaluate statements. Attitudes are affected by the peripheral processing route in low-involvement conditions, as when people have to make a greater effort to

understand the specific elements of a message. It can be postulated that attitudes appear to be affected by the use of peripheral cues--such as creative or aesthetic elements in an ad--under low-involvement conditions rather than high-involvement conditions (Petty, Cacioppo, & Schumann 1983).

Celsi and Olson (1988) suggested that the defining characteristic of product involvement is the perceived personal relevance that a brand offers consumers. This relevance is enhanced when consumers link a product's image or attributes to its potential helpfulness in achieving their own personal goals and serving their personal values. Taking this link to its logical conclusion, product involvement should be stronger when a consumer perceives a strong association between the product's image and attributes and the consumer's own personal goals and values (Celsi & Olson, 1988). Involvement with a product can also differ within an individual consumer depending upon situational factors.

Celsi and Olson (1988) posit that a consumer's associations with a product are stored in memory until "activated" by a situation. They suggest that this activation is highly dependent upon individual situational factors which are highly "experiential and phenomenological" in nature, but which can serve as a powerful trigger that turns the latent memory associations into active thoughts. The activation of these personally relevant thoughts has been called "felt involvement" (Celsi & Olson 1988). Once this activation occurs, consumers become motivated to act upon their associations with a product either through cognitive reactions such as attention or comprehension of product advertising messages, or even overt behaviors, such as searching for, or purchasing, a product (McGrath & Mahood 2004, p.43).

Recent work by Zaichkowsky (1985, 1986, 1994) has provided researchers with a tool, known as the Personal Involvement Inventory (PII), to measure and compare involvement levels for different classes of products. Zaichkowsky's typology was employed in this study. Studies of product involvement's influence on dependent measures of advertising effectiveness (i.e., attitudes, recall, etc.) have generally found that high-involvement products score higher than low-involvement products (Gardner et al. 1985; Thorson & Page 1988; Hitchon & Thorson 1995). Thorson and Page (1988) reported that people who are highly involvement with the product have higher scores of brand recall, a favorable attitude toward the ad, brand and purchase intention.

2.7 Stimuli in FCB Grid Model

The purpose of this study is to examine the role of animation in tripartite attitudinal dimensions (e.g., cognition, affection, and conation). For this study, emotional responses will be defined as pleasure, arousal, and dominance, to be defined in section 2-11-3. This paper assumes that different responses will be elicited under different product categories, like cognitive and affective product categories, as suggested by the FCB (Foote, Cone, and Belding) Grid.

Generally, involvement can be defined as an individual's degree of concern, recognition, or personal relativity to a particular object. Therefore, involvement varies depending on the individual, as well as a given situation. Ratchford (1987) and Vaughn (1980, 86) classified products into either high-involvement or low-involvement categories for the sake of convenience, though involvement standards are not so clearly divided.

The FCB grid model completed by Vaughn (1980) integrated product involvement with the thinking and feeling dimensions of consumer theory. In this model, involvement was regarded as the degree of consumer concern, and the relationship between consumer activity analysis and product classification was systematized (Krugman 1965; Ratchford 1987; Weinberger & Spotts 1989). According to the theory of social judgment by Sheriff (1965), when there is a high degree of involvement, message receivers broaden the latitude of rejection, which narrows the range of reception. In the case of low-involvement products, the receiver accepts the broad range of the message and only rejects inconsistent messages. Thus, this study will assume that people respond differently to ads that fall under high- and low-product involvement categories as it examines consumer responses to animated advertising.

Vaughn's (1980, 86) FCB grid captures cognitive and affective responses to products with its think/feel axis. The grid's other axis represents product involvement. The FCB grid's four quadrants are informative (think/high involvement), affective (feel/high involvement), habitual (think/low involvement), and satisfaction (feel/low involvement). Think is associated with a utilitarian motive and, consequently, with cognitive information processing, while feel implies ego-gratification, social-acceptance, sensory-pleasure motives, and attendant affective processing (Ratchford 1987). This suggests that one would find more objective information in ads for products occupying the think cells. This expectation was confirmed by Weinberger and Sports (1989). Ratchford (1987) has provided evidence for the reliability of product classification based on the FCB grid quadrants (Putrevu & Lord 1994, p.79).

2.8 The Animated Commercial as a New Creative Platform

The animation process results in motion pictures that are created by recording a series of still images-drawings, objects, or people in various positions of incremental movement, which when played back no longer appear individually as static but as combined to produce the illusion of unbroken motion (<http://encarta.msn.com>; contributed by Furniss 2006).

Some researchers emphasize that animation is a highly effective design tool for capturing viewer interest and attention. Animation is usually classified into different categories (Frierson 1994; Furniss 1998), including CGI (Computer Graphic Image) animation, clay animation (claymation), cartoon animation, film animation, drawn animation, pixilation, puppet animation, and silhouette animation. There are thirteen different types of animated commercials, which fall into several functional categories: explanation, demonstration, big model, slice of life, fiction, documentary, comparison, image building, symbol, spectacular, production, commercial, and humor.

The most common type of animation is drawn on cells and is 2-D. It is a traditional design technique. Advanced technology can create a new style animation. The three-dimensional animation of clay animation is created. In current entertainment industry, clay animation and computer generated animation have become the most popular type of animation in film and television commercials.

Clay animation, computer generated animation, puppet animation are the most popular animation types in today's animation industry. As explained in Table 2-1, clay animation employs figures made of plasticine, a material that has an oil base to keep it

flexible. Puppet animation uses three-dimensional figures that are moved incrementally for each frame of film. Pixilation is animation made by using humans or other live subjects filmed incrementally in various fixed poses; when the movements are played back, the subjects move in an unnatural or somewhat surreal way. Due to advanced pixilation technology, the illusion of motion is created through a succession of computer-generated still images (<http://encarta.msn.com>; contributed by Furniss 2006). Cartooning is referred as a series of drawings made on paper in preparation for and in the same size as a painting, tapestry, mosaic, or piece of stained glass (<http://encarta.msn.com>; contributed by Kunzle 2006). Currently, animated cartoons have become tools to influence people's opinions on politics and society.

Table 2-1. Types of Animation

Types of Animation	Description
Clay animation	Animation of figures created of plasticine, clay, or other malleable materials
Cartoon animation	Successful at engaging its audience; even the most bizarre events are easily comprehended.
Silhouette animation	Generally animation in which the animated figures are cut-out silhouettes of the "actual" figures.
Puppet animation	Animation of puppets (or other objects) constructed of wood and other materials.
Pixilation	Used to describe the process of animating live objects (usually people) by photographing them one frame at a time.
Drawn animation	Animation consisting of images drawn on paper or some other medium; some specialized forms of drawn animation such as cut-out animation or direct-on-film animation are separately noted.
Direct-on-film animation	Animation made by painting, etching, or otherwise altering raw film-stock.
Cut-out animation	Animation in which the animated figures are paper puppets with hinged limbs.
CGI animation	Animation of computer generated images in which the animation is created by the manipulation of computer software.

Despite debates about the inadequacies of animation, studies specifically related to advertising elements like sound, color, and motion note that viewers respond well to

such features. Furthermore, new technologies have expanded and reinvented the concept of advertising design and animation. While previous studies concentrated on children's attitudes toward animated commercials and products (Hoy, Young, & Mowen 1986) or the effectiveness of animated spokespersons (Neeley & Schumann 2004), animated ads warrant further study because they have become an increasingly popular design genre that appeals to consumers of all ages.

2.9 The Relationship between Animated Ads and Human Behavior

Brand familiarity is the primary focus in consumer behavior studies. First, a consumer's familiarity with a product or brand influences such concepts as consumer adaptation, self-image, compliance, and identification. Similar studies should focus on the relationships between brand familiarity, consumer confidence in brand evaluations, consumer attitudes toward brands, and purchase intentions. In terms of brand preference, brand choice, and consumption, consumers create meaning to strengthen their identities through brand preferences. The term "match-up hypothesis" defines the fit between a celebrity and an endorsed product and suggests that different types of endorsers and celebrities influence consumer attitudes.

A consumer's familiarity with a product or brand influences such concepts as consumer adaptation, self-image, compliance, and identification. Building on previous research, Laroche, Kim, and Zhou (1996) examined the relationships among brand familiarity, consumer confidence in brand evaluations, consumer attitudes toward brands, and purchase intention. The empirical results from structural equation modeling show that consumer familiarity with a brand influences confidence in that brand, which in turn

affects intentions to buy the brand. These causal relationships are tested in a multiple-brand context.

Zinkhan and Muderrisoglu (1985) defined familiarity is a variable which describes the nature of the cognitive structure a person develops toward a product. As such, familiarity should be viewed as a variable affecting the hypothetical construct of involvement levels (p.356). Zinkhan and Muderrisoglu (1985) also noted that the term “familiarity” has usually been operationalized in the past as frequency of use (Raju & Reilly 1979), knowledge about the product class (Lastovika 1979), and previous experience (Russo & Johnson, 1980). Marks and Olson (1981) argued that familiarity referred to a cognitive representation of past experiences stored in memory. Furthermore, the representation is organized in memory as a product-related cognitive structure or schema (Zinkhan & Muderrisoglu 1985, p.356).

If an individual receives a persuasive message about a product/ brand for which the individual has a well-developed memory structure, then that individual will be able to activate more concepts from memory to use in interpreting the attended stimuli. This may also mean that the individual might exhibit higher activation potential (Cohen 1981) to process the external information. On the other hand, an individual unfamiliar with a product will have less-developed memory structures of the external stimuli with a fewer number of existing cues in memory, resulting in a less-elaborate encoding, and thus with poorer recall of the product and message features (Zinkhan & Muderrisoglu 1985, p.356).

When an individual is familiar with an object and thus has a higher developed memory structure about it, he/she is more likely to have a greater involvement with the stimulus object. If involvement is a psychological and internal state whose activation is

triggered by a particular stimulus, then the more an individual knows, the higher his/her involvement (Zinkhan & Muderrisoglu 1985, p.356). Zajonc and Markus (1982) suggest this phenomenon demonstrates that some preferences are caused by affective factors without the participation of cognitive processes.

Affective factors play an important role in the development and maintenance of preference. Preferences are primarily based on behavioral phenomena. A preference for X over Y is a tendency of the organism to approach X more often and more vigorously than they approach Y (Zajonc & Markus 1982, p.123). A preference for an object can be radically changed with experience while its properties remain constant (Zajonc & Markus 1982, p.124). Zajonc and Markus (1982) asserted that under some circumstances affective responses, including preference judgments, may be fairly independent of cognition (p.125). Advertisements are typically viewed as intervening variables that mediate the effects of message content on brand preferences, buying intentions, or purchases (Holbrook & O'Shaughnessy 1984, p.48).

The term "preference" links consumer convictions, values, awareness, and intentions. Questions of personal identity and collective identity are ranked highly on the agenda of today's postindustrial societies (Giddens 1991). Through brand preference, choice, and consumption, consumers create meaning and try to define or strengthen their identities (Belk 1988; Bhattacharya, & Sen 2003; Elliott & Wattanasuwan 1998; Fournier 1998; McCracken 1986). Zajonc and Markus (1982) suggest this phenomenon demonstrates that some preferences are caused by affective factors without the participation of cognitive processes.

For the terms of fittingness, Till and Busler (2000) identify the origin of the match-up hypothesis in advertising research which examines the differential impact that different types of endorsers (often celebrities) have on an endorsed brand. Early research found that the effectiveness of celebrity endorsements varies by product (Friedman & Friedman, 1979). A study by Kanungo and Pang (1973) paired male and female models (non-celebrities) with different types of products and found that the effect of the models varied depending on the product each model endorsed. Kanungo and Pang (1973) explained their findings in terms of the “fittingness” of the model for the product. The fit between the celebrity and the product was defined by the term “match-up hypothesis” (Kahle & Homer, 1985; Kamins, 1990; Lynch & Schuler, 1994; Solomon, Ashmore, & Longo, 1992). Though beauty is functional and accessible, it also gives consumers a sense of fittingness, belonging, and familiarity that can be extended to brand names.

2.10 The Effect of Motion on Consumer Behavior

Animation has become an important design tool in recent graphic interfaces because it motivates consumer actions and draws viewer attention to specific product features. As Lee, Kippel, and Tappe (2003) have noted:

Motion can be an effective tool to focus users’ attention and to support the parsing of complex information in graphical user interfaces. Despite the ubiquitous use of motion in animated displays, its effectiveness has been marginal at best. The ineffectiveness of many animated displays may be due to a mismatch between the attributes of motion and the nature of the task at hand (p.12).

With the development of new digital devices and more sophisticated computer software, animation is becoming more common in television commercials and banner ads. Although the effectiveness of animated commercials has been doubted by many

researchers (Lee, Klippel, & Tappe 2003; Tversky, Morrison, & Betrancourt 2002), animations can motivate consumer action and increase brand recognition and recall. The animated genre will also appeal more to our increasingly visual culture. Empirical studies on motion in advertisements have explored its psychological effects (Detenber, Benjamin, Simons, & Bennett 1998), stressing that motion could influence human cognitive processing and increase viewer attention to ads (Kipper, 1986; Reeves et al., 1985).

2.11 Tripartite Attitudinal Dimensions: Cognition, Affection, and Conation

2.11.1 Cognition: Belief and Knowledge

The goal of this paper is to examine the role of animation in tripartite attitudinal dimensions (e.g., cognition, affection, and conation). Many scholars (Breckler 1984; Katz & Stotland 1959; Krech & Crutchfield 1948; Ray et al. 1973) have summarized previous hierarchical models and the tripartite attitudinal dimensions common to each: a) a cognitive component (attention, awareness, comprehension, beliefs and opinions, and learning); b) an affective component (evaluation, attitude, feeling, conviction, and yielding); and c) a conative component (intention, behavior, and action). The cognitive component is defined as consumer knowledge and beliefs.

Fishbein (1963) noted that the cognitive component refers to beliefs about the nature of the object and its relation to other objects, while the action component refers to beliefs about what should be done with respect to the object (p.259). Fishbein and Raven demonstrated that valid and reliable measures of belief could be obtained by having the subject judge the concept on a series of bipolar probabilistic scales (e.g., probable-improbable, likely-unlikely, possible-impossible, etc.). It is this definition of belief— the

position of the object or concept on the probability dimension—that will be used throughout this paper. Both the cognitive and action components of attitude can be viewed as beliefs about the object. Belief refers to the component parts of the object and the characteristics, qualities, or attributes of the object and the object's relation with other objects or concepts (p.258). As Fishbein and Ajzen (1972, 1975) pointed out, the term “attitude” has generally been used to refer to beliefs, attitudes, intentions, and behavior. Behavior is determined by intentions, intentions are determined by attitudes (toward behavior) and subjective norms, and attitudes are determined by beliefs and their evaluative aspects.

Buck (1988) defines cognition simply as knowledge: “a more or less complex and organized internal representation of reality, acquired by means of the individual's cognitive skills and through experience with reality” (p. 6). Knowledge by acquaintance is always syncretic, or a holistic synthesis of information. In contrast, analytic cognition consists of knowledge by description, which results from the interpretation of sensory data and involves judgments about phenomena (Chaudhuri & Buck 1995, p.110).

Consumer beliefs can reflect subjective experiences as well as specific events or situations (Wyer & Albarracín 2005). Eagly and Chaiken (1993) defined beliefs as the associations or links that people establish between the attitude object and various attributes (p.103). Therefore, the terms of consumer beliefs can be predicted by applying the laws of objective probability (Wyer & Albarracín 2005).

The affective component is typically labeled as pleasure, arousal, and dominance, while the conative, or behavioral component, is a predisposition toward action (Traindis, 1971), intentions, and behavioral expectations. The behavioral component is thought to

result from the attitudinal and affective components and is an action intending to harm or benefit others, either verbally or physically.

2.11.2 Affection

The direction of the behavioral flow between cognition and emotion goes both ways. Although emotion is always a response to meaning, it can also influence subsequent thoughts and emotions. Cognition, which is causal, also continues into the response state, an idea that is disturbing to those who follow the Aristotelian dictum that a concept, A (e.g., an appraisal), cannot also be B (part of an emotion) (Lazarus 1991, p.824). Affect is clearly one component of attitude and a force in persuasion. The affective component influences feelings or emotions toward an object. Emotion is a reaction to meaning, and if the meaning is changed there will also be a change in the subsequent emotion (Lazarus 1991, p.830). Holbrook (1978) contrasts two different types of meaning as “logical, objectively verifiable descriptions of tangible product features” versus “emotional, subjective impressions of intangible aspects of the product” (p.547). Both types of meaning are contained in virtually any communication; only their relative balance varies. This balance may be assessed by content analysis as one basis for predicting or explaining advertising effects (Holbrook 1977). Emotional appeals aimed at establishing positive feelings of dominance appear to be closely aligned with the intrinsically motivating nature of effectance or competence (White 1959). The attendant feelings of mastery and self-fulfillment are viewed as autotelic, or desirable for their own sake (Holbrook & O’Shaughnessy 1984, p.55).

Detenber, Simons, and Bennett (1998) adopt a three-dimensional view of emotion (Lang 1995; Osgood, Suci, & Tannenbaum 1957; Russell & Mehrabian 1977) popularly

cited as arousal, hedonic valence, and dominance. Typically, emotion research characterizes the valence dimension as a continuous range of affective response extending from pleasant or positive valence at one pole, to unpleasant or negative valence at the other. The autonomic arousal dimension is characterized by a continuous response ranging from energized, excited, and alert to calm, drowsy, or peaceful. These two dimensions, valence and arousal, account for most of the explained variance in emotional responses as researched by Greenwald, Cook, and Lang (1989). Their study was designed to explore the relationship between image motion and emotional responses to pictures. Specifically, the study focused on whether or not image motion had a positive effect on emotional arousal as indexed by self-reports.

According to Plutchik (1980), eight primary emotions can provide a better understanding of many aspects of behavior. For example, primary emotions are relevant to both biological survival behaviors and social adaptations, and equally influence animals, humans, children, adults, sane, and disturbed individuals. These emotions are found (in some form) at all evolutionary levels and have direct relationships to other facets of an individual's psychology, including personality, Freudian ego, defense mechanisms, and clinical symptoms. According to Plutchik (1980), emotion is a functional system that has survival value for the individual and for the species. Emotions are at the center of life, guiding behavior in a way that has functional value.

Feelings are not treated as antecedent states as they have been in many of the extant models of advertising effects (Gardner 1985). Edell and Burke's (1989) study asserted that "if feelings are activated by nonverbal elements of the ad, they are generated by the ad itself and can occur very quickly. Most models of advertising effects have kept

the cognitive system of processing advertising separate from the affective system,” (p.431).

Emotions can play a fundamental role in the purchase or consumption of an entire product category if the product plays an emotional role in the consumer’s life. An emotional tone can draw attention to a message, make it memorable, or illustrate the benefit in action. Extensive and appropriate theme-advertising appears to imbue some brands with a subjective vividness, or authenticity that objectively comparable competitors lack. The brand name is consistently presented in conjunction with the evocation of an emotion and, in time, comes to evoke the emotion itself (Zeitlin & Westwood 1986, p.34)

2.11.3 AdSAM: A Pictorial Nonverbal Measure

AdSAM was used in this study in order to measure affective response. The measure consists of a graphic character arrayed along three different PDA scales: a) pleasure (measures the positive/negative aspect of the feeling), b) arousal (measures the level of intensity or involvement in the feeling), and c) dominance (measures the degree of empowerment the respondent feels).

Many traditional methodologies focused on measuring the rational component of consumer response. In contrast, AdSAM® is usually used to measure emotional responses to a variety of stimuli, including product concepts, advertising (concept and/or finished ad), product attributes, product benefits, brands, logos, tag lines, packaging, music, etc. (Morris 1995, p.63).

The Self-Assessment Manikin (SAM) (Lang 1984) and the attitudinal Self-Assessment ADSAM® (Morris and Kim 2005) consist of a graphic character used to

represent the three dimensions of PAD. AdSAM® depicts each PAD dimension with a graphic character arrayed along a continuous nine-point scale. The first row of figures is the pleasure scale, ranging from pleasant to unpleasant. The second row is the arousal scale ranging from controlled to controlling. SAM visually represents Mehrabian and Russell's three PAD dimensions and was designed as an alternative to cumbersome verbal self-report measures (Lang 1980). AdSAM® is a version of SAM used in marketing consumer studies (Morris 1995).

Initially, SAM was compared to PAD by using the catalog of situations employed by Mehrabian and Russell (1974) to standardize the PAD dimensions. The results indicated that SAM “generated a similar pattern of scale values for these situations as was obtained for the semantic differential (pleasure +.937, Arousal +.938, and Dominance +.660)” (Lang 1980, p.123). SAM presents a promising solution to the problems associated with measuring emotional responses to advertising (Morris & Waine 1993, p.177).

An illustrative typology of emotional content is based on combining the positive/negative bipolarity with the three dimensions found in Mehrabian and Russell's (1974, 1980) research on the PAD (pleasure, arousal, dominance) framework with parallels in Osgood, Suci, and Tannenbaum's (1975) studies on the semantic differential (evaluation, activity, potency) (Holbrook & O'Shaughnessy 1984, p.53).

2.11.4 Conation: Intentions and Behavioral Expectations

Conation response is defined as behavioral intent, such as consumer actions. The semantic differential is used to measure conation response. Cognition refers to the process of coming to know and understand; the process of encoding, storing, processing,

and retrieving information. It is generally associated with the question of “what” (e.g., “what happened,” “what is going on now,” “what is the meaning of that information”). Conation refers to the connection of knowledge and affect to behavior and is associated with the issue of “why.” It is the personal, intentional, deliberate, goal-oriented, or striving component of motivation; the proactive (as opposed to reactive or habitual) aspect of behavior (Baumeister, Bratslavsky, Muraven, & Tice 1998). It is closely associated with the concept of volition, defined as the use of will, or the freedom to make choices about what to do (Kane, 1985; Mischel 1996). It is absolutely critical if an individual is successfully engaged in self-direction and self-regulation.

Bagozzi (1992) proposes that conation is necessary to explain how knowledge and emotion are translated into behavior in human beings. He suggests that one reason why researchers in the areas of cognition and attitudes have not demonstrated a strong ability to predict behavior is because the construct of conation has been omitted. At the beginning of modern psychology, both emotion and conation were considered central to its study; however, interest in these topics declined as overt behavior and cognition received more attention (Amsel 1992; Ford 1987). While goals associated with these latter paradigms are deeply enmeshed in our schools today (e.g., basic skills, critical thinking), Barell (1995) proposes that helping students develop the conative attitudes and skills associated with self-direction and personal efficacy is one of the most critical tasks presently facing parents and educators.

2.12 Summary and Hypotheses

Two experiments were conducted in this study. The first experiment was to assess the impact of animation in commercials through a series of classical conditioning

experiments. A 3 (types of commercials (clay, cartoon and live action formatted commercials) x 2 (degree of involvement: high versus low) between-subjects factorial design was employed on dependent variables in the first experiment. Experiment 1 tests the hypotheses that animated commercials can better yield cognitive and affective results as compared to live-action formatted commercial, and that animated advertisements positively drive viewers to cognition, affection, and conation responses in low product involvement.

In the second experiment, a 2 (conditioning experimental vs. control group) x 2 (high versus low involvement with the product) between subjects factorial design was performed on two different conditions on linear combinations of all dependent variables in the second experiment. The traditional classical conditioning paradigm suggests that positive attitudes toward an advertised product (CS) might develop through its association in a commercial with other stimuli that are reacted to positively (US). Therefore, Experiment 2 anticipates that animation (US) in commercials can led to attitudes toward the animated commercial, advertised brands, and increased purchase behavior.

2.12.1 Experiment 1

Hoy, Young, and Mowen (1986) reported that subjects exposed to an animated host-selling commercial had a greater positive attitude change toward the advertised product than the subject who viewed a non-host-selling commercial. This result could be attributed to the introduction of animated commercials, which may be closely associated with viewer affection and product recognition. Rossiter and Percy (1980) and Gorn (1982) emphasize that attractively designed ads affect consumer attitudes about

consequence through visual demonstrations and verbal testimonies. Neeley and Schumann (2004) found that animated characters affect the subject's attention to an ad's character and product recognition, and can instill positive attitudes toward the product. However, they did find that the relation between animated spokespersons, intention, and product choice is uncertain. Given the previous literature related to the use of animated stimuli in advertisement, it can be said that animated stimuli can instill positive attitudes toward the product. However, the studies comparing animated commercials to live-action commercial were limited.

Mitchell (1979) defined involvement as an individual experience whose motivational properties are evoked by a particular stimulus or situation. The degree of involvement could affect to consumer attitude formation when they are exposed to any kind of ad components in commercials. According to the ELM, people have high motivation to process advertising messages with high personal relevance, and high product category involvement. In high product involvement, people are more likely to make a cognitive effort to evaluate the product.

Attitude formation or change results from a consumer's careful attempts to comprehend and evaluate the brand-relevant content of an ad. And then the consumers are likely to integrate this new information with their prior knowledge into a coherent and reasoned opinion about the brand (Mackenzie and Spreng 1992, p.519). That is, consumers' attitudes are based on a careful and effortful analysis of the true merits or central issues contained within the message (Hoyer MacInnis 2001, p.133). When consumers are highly involved with the product, they are trying to seek the more information in order to evaluate the commercial. According to source credibility theory,

people are less likely to anticipate what will be said and hence are less likely to take steps to avoid information inconsistent with their own frames of reference. Information received from a real life source may also seem like story-telling, which somehow makes it more real. This factor in turn may make the information more persuasive (Hoyer MacInnis 2001, p.390). Given that people are more likely to make a cognitive effort to evaluate the product in high product involvement situations, it can be logically posited that perception of reality is also salient. Thus, live action commercial would be a more effective and credible source when consumers form their attitude as compared to using animation as the persuasion tool.

Clay animation is made by using three-dimension technique such as stop motion capture whereas cartoon animation is produced by using the traditional two-dimension technique (Frierson 1994; Furniss 1998). It can be assumed that clay animated commercials has more evocable character and image than those of cartoon animated commercials. Thus, subjects who are highly involved with the product may be more likely to pay attention to clay animation in advertising because clay animation contains motion and a more powerful visual image than cartoon animation based advertising. The above findings led to the following hypotheses:

H1: All other things being equal, when subjects who are highly involved with a product

H1-1) are exposed to live action formatted commercial they will exhibit: a) higher levels of pleasure; b) higher levels of arousal; c) more favorable attitudes toward the ad; d) more favorable attitudes toward brand; and e) higher purchase intention than those subjects exposed to clay and cartoon commercials.

H1-2) are exposed to clay animated commercial, subjects will exhibit; a) higher levels of pleasure; and b) higher levels of arousal; c) more favorable ad attitudes;

d) more favorable brand attitudes; and e) higher purchase intention than those exposed to cartoon commercial.

As reviewed in the previous literature, animated characters and motion in commercials may influence viewer attention to the advertisement as well as change consumer attitudes toward the advertised brand. Phillips and Lee (2005) suggest that animation on the Web increases character-linking and perceived entertainment levels. In light of the previous research on animation, Web advertising could provide information on the development of effective advertising tools. Animated ads can increase positive affection and consumer attitudes toward both ad and brand. Animated commercials are also closely related to advertising recall and a high arousal levels. Many researchers assert that animation can motivate consumers to action and increase brand recognition and recall (Lee, Klippel, & Tappe 2003; Tversky, Morrison, & Betrancourt 2002). Detenber, Simons, and Bennett's study (1998) stressed that motion in advertisements could affect human cognitive processing and is closely related to human emotion. Image motion in advertising could be affected to some kinds of emotion such as arousal and pleasure. Also image motion can be evoked consumer arousal. Other research reported that motion in ads can increase the subject's attention level (Reeves et al. 1985; Kipper 1986).

Zaichkowsky (1985) argued that involvement studies on consumer behavior generally used the resulting behavior as indicators of involvement level. She also argued that it is important to accurately measure the differences between personal associations with ads, brand purchase intentions, and consumer decision making. MacInnis and Park (1991) examined the impact of two dimensions of music—its fit within the advertised

message and its ties to past emotion-laden experiences (indexicality)—on low- and high-involvement in consumer ad processing. They found that personal, relevant involvement could be influenced by the advertisement's executional cues such as music, source characteristics, and message sidedness. Such executional cues create, affect, or stimulate inferences that generate the basis for low-involvement consumer brand attitudes, whereas high-involvement consumers are thought to ignore such peripheral cues in forming brand attitudes, focusing instead on the advertised message and their reaction to it (MacInnis & Park 1991; Petty, Cacioppo, & Schumann 1983). Regarding the literature-related involvement, the degree of involvement could affect to subjects' perception of animated commercials.

According to the ELM, people modestly involved with the product have low motivation to process advertising component due to low personal relevance and low need for cognition (Cho 1999). Also, affective stimuli (e.g., background music, pleasant visual scenes, characters, and images) in an advertisement follow a peripheral processing route, as these elements require less cognitive effort on the viewer's part. The advanced technology and development of human resource allow clay animation to have more evocable character and image than those of cartoon animation. Clay animation in advertising is associated with the influence of lower-level peripheral processing routes on viewer persuasion because animated stimuli heavily rely on viewer aesthetic factors.

Thus, the following hypotheses are logical extension of these findings:

H2: All other things being equal, when subjects who are low involved with a product

H2-1) are exposed to clay animated commercial, the subjects will exhibit; a) higher levels of pleasure; b) higher levels of arousal; c) favorable animated

commercial attitudes; d) favorable brand attitudes; and e) higher purchase intentions than those exposed to live action formatted commercial.

H2-2) are exposed to clay animated commercial, the subjects will exhibit a) higher levels of pleasure, b) higher levels of arousal, c) more favorable animated attitudes, d) more favorable brand attitudes, and e) higher purchase intentions than those exposed to cartoon commercial.

Zinkhan and Muderrisoglu (1985) noted that the higher a person's involvement in and familiarity with a product and the higher their ability to cognitively differentiate between the product's features, the higher the recall of the contents/characteristics in the product's advertisement (p. 356). If activation of this internal state is high (possibly caused by a greater degree of attention to a particular stimulus), then subsequent memory performance and recall should also be high (Zinkhan & Muderrisoglu 1985, p.356). Therefore, high involvement conditions due to comprehension and elaboration should also lead to a better recall of message characteristics (Zinkhan & Muderrisoglu 1985, p.356).

Thorson and Page (1988) found that commercials for brands with high product involvement generated significantly higher scores for the dependent measures of brand name recall, brand attitudes, attitudes toward the ad, attitudes toward purchasing, and purchase intentions (McGrath & Mahood 2004, p.43). Individuals who are highly involved with a stimulus have a greater tendency to pay attention to the stimulus (Celsi & Olson 1988), so the higher levels of attention to the stimuli in this experiment may result in ad recall. In addition, Gorn's (1982) study suggests that individuals who are highly involved with objects are less likely to respond to music as affective stimuli than to the information provided regarding the product.

Therefore, it can be postulated that the higher the individual's attention to animated stimuli, the higher the ad recall of the contents and components in the commercials. Clay animation ads are produced by incorporating visualization and appropriate motion in commercials. Using image motion in commercials could increase viewer attention to commercials due to the fact that clay animations are produced by using a style of image motion and movement based reality.

Given the literature related to animation stimuli with aesthetic factors, people who are exposed to clay animated commercial are more likely to experience a higher ad recall than to live action and cartoon commercials. This theoretical linkage postulates the following hypothesis:

H3: All other things being equal, regardless of product involvement, when subjects are exposed to clay animated commercial, the subjects will exhibit increased ad recall than those exposed to cartoon based and live action formatted commercials.

In the hypothesis 4 it is assumed that the role of product involvement could act as moderator of the effects of types of commercials on consumer responses. As reported in literature related to the role of involvement on consume behavior, the degree of involvement with the product is highly correlated with dependent variables such attitude toward the ad, brand and purchase behavior. Therefore, the following hypothesis is posited:

H4: There is a two-way interaction between three different types of commercials and degree of involvement will exist on; a) pleasure; b) arousal; c) attitude toward the animated commercial; d) attitude toward the brand; and e) purchase intention respectively.

2.12.2 The Hierarchy of Communication Effects in Advertising

Many consumer behavior models were developed following the introduction of Lavidge and Steiner's (1961) Hierarchy of Effects model. This model posited a sequential hierarchy of events in which consumer purchase behaviors occurred, including awareness, knowledge, liking, preference, and conviction (Vaughn 1979, p.28). In addition, Lavidge and Steiner (1961) asserted that cognition includes awareness and knowledge, affect includes liking and preferences, and conation includes conviction and purchase. Holbrook and Batra (1987) pointed out that cognition has generally been viewed as a system of beliefs structured into some kind of semantic network, that behavior has typically been regarded as synonymous with buying responses, and that affect has been treated as a unidimensional bipolar continuum (p.405).

As summarized in his historical tripartite classification, Krugman's model (i.e., cognition-affect-conation) could be used in low-involvement situations (1965). Zajonc and Markus model (e.g., affect-conation-cognition sequence, 1982) suggested that preferences do not require a cognitive basis, but instead are mainly based on affect. Ray et al.'s sequence (i.e., conation-affect-cognition, 1973) explained that consumer purchase behaviors are followed by attitude formation to reinforce consumer choices, and finally selective learning to further support purchase decisions (Yoo et al. 2004).

Vaughn (1979) explained the tripartite classification (Feeling-Learn-Do) by dividing economic, responsive, psychological, and social elements into the FCB model. Vaughn focused on four consumer types: a) the rational consumer who follows the economic model by consciously considering functional cost-utility information in purchase decisions; b) the habitual consumer who follows the responsive model by

thoughtlessly buying through rote, stimulus-response learning; c) the unpredictable consumer who follows the psychological model by compulsive buying under the influence of unconscious and indirect emotions; and d) the compliant consumer who follows the social model by continually adjusting purchases to satisfy cultural and group needs for the sake of conformity (p.28).

Thus, the tripartite attitudinal dimensions can be applied to three different types of commercials. Furthermore, this model would provide a better understanding of consumer purchase behaviors when consumers are exposed to three different types of commercial stimuli. Therefore, this study will first seek an answer to the following research question:

RQ1) Will different values for the Tripartite Attitudinal Dimensions model be found in the three different types of commercials?

In the second experiment, animation as stimuli could be extended to examining the classical conditioning mechanism because animation is considered as affective stimuli in that it can generate a positive affective attitude in the consumer.

2.12.3 Experiment 2

The impact of product information in commercials on beliefs and attitudes would typically be interpreted within an information processing framework. It is suggested here that a classical conditioning framework could account for the potential impact of background features, such as animation, on product attitudes.

Shapiro and MacInnis (1992) identify that classical conditioning involves exposing subjects to a positive or negative stimulus paired with a US such as music (Gorn 1992), a drama series (Allen & Madden 1985), or visual imagery (Rossiter & Percy 1980; Stuart et al. 1987), along with a neutral paired with a stimulus (e.g., the ad or brand). Classical conditioning asserts that a stimulus paired with a positive or negative

conditioned stimulus (CS) such as the ad and brand could generate positive or negative affective responses toward the CS.

Gorn (1982) suggests that the simplest association between CS (e.g., product) and US (e.g., music) will affect product preferences as measured by product choices. He also suggests that the background features of commercials positively affect consumer product choices. Applying the previous literature and stimulus to present studies on the animation advertising genre is important to our understanding of advertising's effect on consumers. Animation as stimuli could be extended to examining the classical conditioning mechanism because animation is like other design tools, such as music and visual imagery, in that it can generate a positive affective attitude in the consumer. Furthermore, the created positive affection could be associated with the advertised product through classical conditioning. Brewer (1974) posited that classical conditioning is the repeated pairing of a CS with a US, causing the CS to elicit a CR in an unconscious automatic fashion. Gorn (1982) suggested that the communication effect may be due to some extent to the association of the attitude object with positive emotions attached to the communicator. This study focuses on animated commercials as stimuli in classical conditioning mechanisms by establishing its place in the ongoing debate over the affective and cognitive processes.

Hoyer and MacInnis (2001) observed that motivation is influenced by the extent to which the ad, brand, product category, or other characteristic is personally relevant to consumers. Thus, a key factor affecting motivation is the extent to which something is personally relevant, or has direct implications and significance in one's life (p.60). Involvement with an advertised message has a considerable impact on how brand

attitudes are formed or changed (Laczniak, Muehling, & Grossbart 1989, p.28). Personal relevance involvement is a mechanism used to explain and predict consumer's behavior because involvement plays an important role in advertising processing. Thus, the literature reported above led to the following hypotheses:

H5: When all subjects are exposed to a classical conditioning procedure in which a target brand (CS) is systematically paired with an animated stimulus (US); subjects with high product involvement will exhibit; a) higher levels of pleasure and b) arousal; c) more favorable attitudes toward the ad and d) target brand, and e) higher purchase intention in conditioning experimental group than in the control group. In addition, subjects with low product involvement will exhibit; f) higher levels of pleasure and g) arousal; h) more favorable attitudes toward the ad and i) target brand, and j) higher purchase intention in conditioning experimental group compared to the control group.

Kim et al. (1998) argued that the selected US provoked positive affects while communication resulted in no product beliefs. Since a conditioning effect can be directly transferred in the absence of product beliefs, the subsequent selection of the US allows one to infer that the resultant conditioning effect is due exclusively to direct affect transfer.

Gorn, Goldberg, and Basu (1993) found that under high-source awareness there was no difference in speaker evaluations between subjects in a good mood and those in a bad mood. A study on subjects in good or bad moods suggested that it was only the former who were able to correct for the bias in their evaluations when made more aware of the source of their mood. Gorn, Jacobs, and Mana (1987) emphasize that the role of awareness in conditioning is the critical issue in classical conditioning mechanisms. Given psychological and consumer behavior literature, Pavlovian conditioning can affect

the behavior of adult humans without their awareness of any experimental hypothesis, without their awareness of the relationship between the conditional and the unconditioned stimuli, and without their cooperation (Gorn, Jacobs, & Mana 1987, p.415).

Contingency awareness exists when experimental subjects know that the CS and US have been related temporally in an experiment's sequencing (Shimp 1991, p.160). Allen and Janiszewski's (1989) study reported that subjects were identified as exhibiting contingency awareness when they knew that certain Norwegian words (US) were more likely than others to be followed by positive feedback (US). Shimp (1991) argued that contingency awareness may be necessary for a conditioned effect to materialize (p.160). Another study argued that high levels of contingency awareness play a role in attitude formation and classical conditioning (Stuart et al. 1987). Therefore, the role of awareness in classical conditioning is examined here by using animation as the stimuli—as explained in the following hypotheses.

H6: Subjects with high product involvement will exhibit an increased likelihood of recognizing the contingency than subjects in a control group. This means that those who are exposed to a classical conditioning procedure in which a target brand (CS) is systematically paired with an affective animation stimulus (US) have a greater perception of contingency awareness than subjects in a control group.

H6-1: Contingency awareness will mediate the relationship between classical conditioning procedures and attitudes toward the ad, target brand (CS), and purchase intention.

H7: In the animation stimulus, subjects exposed to the target brand (CS) paired with the animation stimulus (US), and who are aware of the contingency relationship between the target brand (CS) and animation stimulus (US) will develop more favorable attitudes toward the target brand than subjects who are unaware of the contingency relationship.

2.12.4 The Hierarchy of Communication Effects in Advertising

After introduction of the Lavidge and Steiner's (1961) Hierarchy of effects model, many consumer behavior models have been developed until now. The model assumed that consumer purchase behavior of a product occurred via a sequential hierarchy of events from awareness through knowledge, liking, preference, and conviction (Vaughn 1979, p.28). In addition, Lavidge and Steiner (1961) mentioned that cognition includes awareness and knowledge, affect includes liking and preferences and conation includes conviction and purchase. This model suggested that advertising researchers have developed different hierarchical models for various consumer decision making situations, but agree hierarchy of effects model (Yoo et al. 2004). Holbrook and Batra (1987) pointed that cognition has generally been viewed as a system of beliefs structured into some kind of semantic network as well as behavior has usually been regarded as synonymous with buying responses. Finally, affect has typically been treated as a unidimensional bipolar continuum (p.405).

Ajzen and Fishbein (1980) the three –component view of attitude classified as cognitive (e.g., perceptual responses and verbal statement of belief), affective (e.g., sympathetic nervous responses and verbal statements of affect), and behavioral or conative (e.g., overt actions and verbal statements concerning behavior) (p.20). Ray et al (1973) summarize previous hierarchical models by suggesting that three components are common to each: a cognitive component (attention, awareness, comprehension, and learning), an affective component (evaluation, attitude, feeling, conviction, and yielding) and a conative component (intention, behavior, action).

Baker and Churchill (1977) have categorized attitudes toward advertising into three parts: a) the cognitive component, which consists of the knowledge or belief an individual has toward the object; b) the affective component, which consists of the feeling an individual has toward the object; and c) the conative component, which includes the action or the inclination of a possible action the individual has toward the object.

Generally, the cognitive component in the hierarchy of communication effects includes knowledge about individual features or attributes and their respective weights (or value) in addition to a brand name as well as the presence of an imagery-based prototype or an exemplar along with brand name knowledge. Affect has typically been assumed to be stable and strong enough to influence the behavioral intention which carries a commitment on the part of the attitude holder (Park & Mittal 1985, p.220). Affect, which is generated from aspects of the reference object such as an attractive model, a jingle in the commercial, or a product package, would then be attached to the brand name through a classical conditioning approach (Park & Mittal 1985, p.221).

Hilgard (1980) mentioned that the persistence with which cognition, affection, and conation were recognized as major classifications of mental events suggests that there may be a natural utility to the classificatory scheme (p.115-116). He also noted that hot cognition refers to thoughts and decisions that have high affective or conative importance to the person (p.115). There are three absolutely irreducible faculties of the mind, namely knowledge, feeling, and desire (cited in Hilgard 1980, p. 109).

Vaughn (1979) was trying to explain the tripartite classification (Feeling-Learn-Do) in dividing economic, responsive, psychological and social in FCB model. His point

of view was focused on four consumer types, first, a rational consumer who consciously considers functional cost-utility information in a purchase decision in economic model. A habitual consumer conditioned to thoughtlessly buy through rote stimulus-response learning could be defined in responsive model. An unpredictable consumer who buys compulsively under the influence of unconscious through and indirect emotions could be defined in psychological model. A compliant consumer who continually adjusts purchases to satisfy cultural and group needs for conformity could be defined in social model (p.28).

The several alternatives to the original Lavidge and Steiner model (1961) suggest that advertising researchers have developed different hierarchical models for various consumer decision making situations, but agree on the importance of the three basic tenets of the hierarchy of effects model. However, many alternative models attempt to explain consumer purchase behavior and many researchers have tried to develop the tripartite attitudinal dimensions (i.e., cognition, affection, and conation). Therefore, this study will seek an answer to the following research question:

RQ2: The tripartite attitudinal model can be explained in a classical conditioning experiment when using animated commercial stimuli. Thus, the tripartite attitudinal dimensions can be applied in classical conditioning research, and the model would provide a better understanding of consumer cognitive, affective and purchase behavior when consumers are exposed to animated commercial stimuli. Will different values of the tripartite attitudinal model exist between experiments and control groups and two different product involvement groups?

CHAPTER 3 METHODOLOGY

3.1 Overview of Experimental Design

Two experiments were conducted to examine the effects of animation in advertising design on linear combination of all dependent variables, as well as the role of animation on emotional response. The first experiment investigated the relationship between exposure to animated commercials and responses to subsequent ads (e.g., emotional responses, attitudes toward the ads, brand, purchase intention, and ad recall). An experimental design was used to determine if there was a significant difference in cognition, affection, and conation. The experiment measured five sub-categories for two different animated commercials and live action commercial: a) emotional responses, b) attitudes toward the commercial, c) attitudes toward the brand, d) purchase intention, and e) advertising recall. The second experiment assessed the impact on consumer attitude formation in advertising using a classical conditioning mechanism. The classical conditioning has long been employed in the study of consumer behavior and as a means of interpreting the effects of advertising, such as attitude changes. Classical conditioning is a prime method of persuasion, and the study will demonstrate its effectiveness when using animated stimuli.

3.1.1 Experiment 1

To examine the effects of animated and non-animated commercials on dependent variables, this experiment used a between-subjects factorial design: a 3 (cartoon-based animation, clay animation, and live action commercial) x 2 (product involvement: high

versus low). A MANOVA was used to examine differences between the animated and non-animated commercials on linear combinations of all dependent variables, and a between subject designed ANOVA was performed on each dependent variable.

3.1.2 Pilot Study

A pilot study was conducted for this experiment to check the validity of animated commercials. Commercials were classified into animated and non-animated types by three advertising professionals and scholars in the advertising field. Specifically, the animated commercials were categorized as either cartoon-based or clay animation. The purpose of a pilot study was to classify cartoon, clay animation and live action formatted commercials. Based the definition of product of clay animation and cartoon, they selected each commercial from among several. All animated characters were made by using clay animation in commercials. Also the same criteria were applied to the selection of cartoon based commercials. Live action formatted commercial was selected from among them produced without mixing with any cartoon and other animated types. In order to maximize animation commercial exposure, the original language was translated to English and then superimposed on each commercial. The commercials being used in this study were taken from those of several countries (e.g., America, England, Germany, Japan, and Korea) for which control of extraneous variables regarding brand predisposition and of pre-exposure of the U.S. respondents was possible. Thus, several different animated commercials were selected for pretest.

3.1.3 Pretesting the Animated Stimuli and Materials

A pretest was conducted to ensure that the directions and questions were clear and unambiguous, and to prepare for unexpected situations (e.g., video quality and space), as

well as to check the reliability dimension of independent and dependent variables selected for this study. This pretest was administered to about 30 undergraduate students. The pretest's objective was to ensure the subject's perception of different animated characters as affective stimuli in commercials. Affect items were adapted from Gorn (1982) and Allen & Madden (1985). The pretest for edited several animations was conducted by using a four-item affect scale and seven-point semantic differential scale (e.g., pleasant vs. unpleasant, like very much vs. dislike very much, left me with a good feeling vs. left me with a bad feeling, and interesting vs. boring).

The results of pretest led to the selection of animated stimuli for the actual experiment. Playing scenes of human and animal mixed characters made by clay had a mean of 5.1. Playing scenes of fruit character by clay had a mean of 5.0. Playing scenes of animal character made by cartoon had a mean of 4.5. Playing scenes of human character made by cartoon also had a mean of 4.8. Playing scenes of personified human character had a mean of 4.8.

After the pretest, a list of unfamiliar words used in the questionnaire was compiled in order to make the directions of the experiment clear. The pretest also ensured that video and sound quality were reasonable. The TV commercials were fixed at 15 seconds for each sample, since exposure time could be an important issue due to the fact that advertisements contain various components to alert subjects mentally and psychically. Thus, the pretest involved fixing the time schedule in the experiment to avoid subject bias.

To examine the effects of animated commercials on affective responses, three different versions of a television commercial for an existing electronic product and soft drink were edited by a professional designer. Several television commercials were

specially selected for use as stimulus materials in the experiment. In order to maximize the animation commercial exposure, the original language was translated into English if necessary and then superimposed on each commercial. The commercials being used in this study were taken from those of five countries for which control extraneous variables regarding brand predisposition and of pre-exposure of the U.S. respondents was possible. Each commercial contains the brand name, company logo and animated characters playing scenes. Five 15-second commercials and three additional 15-20 second commercials were selected. To avoid specific subject bias and increase the generalizability of the study, each commercial was edited to 15 seconds using a media editor.

Commercials were divided into two major categories: animated (subdivided into cartoon-based and clay animation commercials) and non-animated (e.g., live action formatted commercials). Snap shots of animated stimuli are in appendix C.

3.1.4 Subjects

Subjects were undergraduate students enrolled in introductory advertising and public relations courses. All subjects signed an informed consent form prior to their participation in the experiment. Six hundred twenty undergraduate students at a large southern university participated in this study. As an accessible and large population, students were considered appropriate subjects for this study's goals, which examined the causal relationship between exposure to animated commercials and ad attitudes.

3.1.5 Procedure

Upon arrival at the scheduled time, subjects were given a packet entitled “Advertising research.” After each subject received a packet, an investigator asked them to write down their name and 8-digit student identification numbers on the first page of the questionnaire. Before the real experiment, investigators explained the procedure and all subjects read the goal of the experiment. Subjects were instructed when to begin, when to stop, and when to turn the page. The subjects were told that the experiment involved working with an advertising agency to conduct a survey on foreign commercials, because the advertising company was considering creating English versions of commercials to launch products in the U.S. Subjects were also told that the advertising agency values student opinions and their responses could help to promote or stop the conversion of the foreign commercials into English versions. The subjects were then divided into three groups to measure the different commercial formats. That is, participants assigned to each group were exposed to three different commercials (between factors) separately. The commercials were presented with an overhead projector and each commercial lasted 15 seconds.

After explaining the directions for the experiment, the investigator showed each subject group three different animated television commercials (e.g., clay animated commercial for first group, cartoon for second group and live action for third group). After watching each commercial, subjects were asked to fill out the second page of the questionnaire, which included emotional response scales. Subjects were given a limited amount of time after viewing each commercial to mark their belief of brand, attribution of commercials and brand, and purchase intent on a self-reporting questionnaire. Ad

recall was measured on the last page. After completing this stage, subjects filled out the rest of the questionnaire.

3.1.6 Product Involvement Manipulation for Experiment 1

After filling consent form on the first page, subjects were asked to read the following statement carefully and assume that it was their current situation:

To successfully launch a new product named Juice the company will conduct a promotion at a grocery store. This company is trying to penetrate the juice market. When buying this product, you would receive a book of coupons good for a year from a grocery store.

Subjects were asked how much relevance the product has to them before the actual experiment. If they chose the number below zero (-2 , -1 and 0), then go to the second page. The second page described the blank page. However, if they chose the number over zero (1 and 2), then go to the third page. Investigator asked them to read the following statement:

For participants highly involved with this product. Please pay careful attention to the video presentation. After watching the commercials related to the Juice, please carefully answer each question. Investigators will choose someone who makes the best response to the questions after collecting data. Then the investigators will pick the name from the group pool to win a prize.

For participants highly involved with the Juice brand, investigators encouraged them to pay careful attention to the video presentation. After watching the commercials related to Juice, subjects were asked to carefully answer each question. They were also told that after collecting data the investigators would chose the subject with the best response to win a prize.

3.1.7 Variables and Measures

The measurement tools used in this study are based on the literature review related to the tripartite attitudinal dimensions (e.g., cognition, affection, and conation). The research also used previously-developed scales, modified when necessary, to measure the variables in the study. Specific scale items can be found in Appendix B.

To measure cognition response (e.g., belief), a seven-point Likert type scale developed by marketing researchers was used. Measurement tools used in the copy-testing firm and consumer research area were employed to gauge belief (Breckler 1984; Katz & Stotland 1959; Krech & Crutchfield 1948; Ray et al. 1973).

Affective responses: Pleasure, arousal, and dominance: To measure emotional response, AdSAM® was used in this study. The measure consists of three different scales: a) pleasure (measures the positive/negative aspect of the feeling), b) arousal (measures the level of intensity or involvement in the feeling), and c) dominance (measures the degree of empowerment the respondent feels). AdSAM® (Morris 1995) is a graphic character that represents the three dimensions of PAD. Initially, SAM was compared to verbal PAD by using the catalog of situations employed by Mehrabian and Russell (1974) to standardize the three PAD dimensions. The results indicated that SAM “generated a similar pattern of scale values for these situations as was obtained for the semantic differential” (Lang 1980). AdSAM® is in appendix B.

Attitudes toward advertising (Aa): The research used previously developed scales, modified when necessary, to measure the variables in the study. These semantic differential scales measured attitude toward the ads and were selected from various prior research studies (Biehal, Stephens, & Curlo 1992). The questions asked subjects to

evaluate ads (using a semantic differential scale), along with five measures identified by the labels “unfavorable/favorable,” “bad/good,” “dislike/like,” and “negative/positive.”

Attitude toward the brand (Ab): Attitudes toward the brand were assessed utilizing a four-item, seven-point semantic differential scale (bad/good, unfavorable/favorable, negative/positive, and dislike/like). This attitude to the brand measure was used in prior research by MacInnis and Park (1991). The author reported that 87.5% of brand attitudes can be accounted for using the scale in factor. Excellent reliability of the scale was also obtained (Cronbach alpha=.95). The brand attitude scale was computed by averaging the summated items.

Conation responses as purchase intent (PI): Purchase intent was measured using Haley and Case’s (1979) Verbal Purchase Intent Scale. The scale is a single-item Likert-type scale. Validity for this scale was established by Gormly (1974) as well as Gruber (1970). Also, Haley and Case (1979) report the verbal purchase intent scale had a high factor loading on the product evaluation factor with a coefficient alpha of 0.88. The scale’s significant reliability (test-retest) was also reported by Kassarian and Nakanishi (1967) and Hughes (1967).

Ad recall: Ad recall was measured by asking subjects to recall the names and brands that they could remember from the commercials with descriptions. For ad recall, subjects were instructed to write down everything they could remember about the ads themselves, such as ad description, the displayed product name, characters, storyline, and theme, as well as any feelings toward the ad. Ad recall scores can be calculated by counting the number of ad components correctly recalled (Edell & Keller 1989; Jin 2003).

Ad recall measure was very similar to Brand recall measurement. Brand recall was measured by the number of times the brand was mentioned in the subject's responses to the open-ended questions. Ad content playback was measured by counting the number of words used to answer the second open-ended questions (Stout & Leckenby 1988, p.55). Walker and Dubitsky (1994) found that liking relates to other copy-testing measures such as related recall, brand preference, and persuasion. One possible explanation for how liking works has to do with the rational, cognitive processing of advertising messages. A well-liked advertisement can affect information processing by creating positive arousal and activation (Kroeber-riell 1979), improving the recall of the advertised material, and producing more positive judgments toward the message (Aaker & Myers 1987; Youn et al. 2001, p.7). Favorable feelings influence memory by maintaining positive feelings at the time of stimulus encoding, influencing how the information was organized in memory, and highlighting specific features that are retrievable later (Zajonc 1980; Lingle & Ostrom 1981; Zinkhan, Locander, & Leigh 1986; Youn et al. 2001, p.7).

3.1.8 Involvement Manipulation Check

The manipulation check measure consisted of six items adapted from Zaichkowsky (1985) to determine the extent to which the participants paid attention to a product offered via slide presentation and the stimuli. Subjects were asked how much relevance the product had to them before the actual experiment. And investigator told subjects to checkmark to the number what thoughts and feelings went through their mind about the product after watching the commercial. The items used in this study consisted of "useless/useful," "uninterested/interested," "worthless/valuable," "unwanted/wanted," and "irrelevant/relevant." Excellent reliability of the scale was obtained (Cronbach alpha

= .90). A *t*-test indicated that the intended manipulation was successful. The high product involvement participants reported a mean of 5.6 compared to a mean of 3.3 for the low product involvement participants. This difference was found to be significant ($t = 26.5$, $p < .001$).

3.2 Classical Conditioning Experiment 2

For Experiment 2, classical conditioning was carried out with electronics (e.g., MP3 player) and beverage (e.g., orange juice) products. The primary procedure replicated the classical conditioning procedure suggested by Gorn (1982), Allen and Madden (1985) and Rossiter and Percy (1980).

In the belief-based approach following an earlier classical conditioning procedure, the favorable emotional consequence of the belief serves as an unconditioned stimulus (US) which is paired with the product, a conditioned stimulus (CS). As conditioning proceeds, the product alone becomes increasingly capable of eliciting a favorable emotional reaction and a favorable product attitude. Stimuli (e.g., visual imagery) with favorable emotional consequences can be paired with a product allowing for an increase in the consumer's overall evaluation of the product and brand attitude. Given that visual content is closely related to the evaluation of a product, animated commercials as stimuli would be an effective marketing or persuasion tool as the affect-producing, unconditioned stimulus.

3.2.1 Selection of Conditioned Stimulus

Based on classification of product suggested by Ratchford (1987) and Vaughn (1980, 86), the products required thinking and economical consideration were included notebooks, digital cameras, MP3 players, televisions, mobile phones, DVD players, and

refrigerators. The products required feeling and affective consideration were included consumption products such as toilet papers, confectionaries, soft drinks, and cosmetics.

3.2.2 Pretesting for the Unconditioned Stimulus

The pretest adopted previous classical conditioning experimental procedure (Allen and Madden 1985; Gorn 1982), therefore, it was necessary to find material that would elicit both pleasant and unpleasant feelings. Thirty undergraduate students participated in a pretest in which they rated 13 slides from animated commercials (potential USs) on a four item affect scale (pleasant vs. unpleasant, like very much vs. dislike very much, left me with a good feeling vs. left me with a bad feeling, and interesting vs. boring). In addition, four fictitious brands (e.g., foreign products) of packaged goods were pretested as possible CSs. Participants were asked to indicate their perceptions of how similar the brands were to other brands in the same category and to rate each brand on a three-item scale (good/ bad, like/dislike, and pleasant/unpleasant). Pairs of terms or phrases anchored either end of a seven-point scale. Of note were the scores on the item “left me with a good feeling/bad feeling”. Producing good feelings and/or bad feelings is, of course, a necessary part of an effective conditioning experiment.

3.2.3 Filler Material

To detract participants’ attention from the focal CS-US pairing, filler animations were employed as is essential when conducting classical conditioning experiments. An alternative explanation for the results obtained in a classical conditioning study is demand artifact (Kellaris & Cox 1989). Using filler animation stimuli decreases hypothesis guessing and reduces the possibility of demand artifact interpretation of the results (Kim et al. 1996; Stuart et al. 1987). The filler material used for the study consisted of three

fictitious and three real brands (a television, a mobile phone, a notebook, cosmetics, a soft drink, and a sports drink), and various USs that generated no affect and conveyed no systematic meaning. This study also chose two target products: an MP3 player as the high-involvement product and orange juice as the low-involvement product.

3.2.4 Procedure

The second experiment examined the role of animated stimuli on consumer-attitude formation by using a classical conditioning mechanism. The experiment procedure and questionnaire were developed based on the respondent feedback regarding treatment stimuli and the clarity of the questions. The experiment was conducted in groups of approximately 331 subjects that met after regular class time. Subjects were divided into equal groups by randomly assigning a classroom to either the experimental group or the control group. Upon arrival at the scheduled time, subjects were given a packet entitled "TV Commercials Study." After all the subjects received the packet, the investigator asked them to write down their name and their student identification numbers on the first page of the questionnaire. They entered a room that had been set up for a slide presentation where they received a booklet with instructions and questions. Investigators explained the instructions and the participants were instructed on when to begin, when to stop, and when to turn the page. Once they read the instructions, the investigator turned off the lights and showed the slides. After the presentation, the subjects were instructed to read each question carefully and then respond to the questions in the booklet.

Though the number of CS/US contingency pairings is a variable of interest in conditioning work (Stuart, Shimp, & Engle 1987), our intent was not to vary repetition. This study was chosen to pair (in the treatment condition) the CS and US three times.

Priluck and Till (1998) used six pairings in their experiment because they felt more pairings would generate a more valuable initial conditioning effect than the use of one or three pairings would, but with more pairings comes the risk of subject boredom. Three pairings were ideal due to the nature of animation, which is both motion and story. Three pairings also allowed for an even distribution of the three affectively positive animations within the sequence of motions. The treatment subjects were exposed to three pairings of pleasant scenes with target products and 3 sets of filler brands with 3 neutral scenes each. Filler brands were included to disguise the nature of the study and prevent hypothesis guessing.

In the control condition, participants were exposed to the same stimuli as the conditioning group. However, the selection of stimuli presentation was randomized, and there was no systematic pairing of CS and US. Rescorla (1967) emphasized that a random group was needed to test for the effects of conditioning. By comparing different groups, the results can be inferred that the animation effects were due to conditioning.

3.2.5 Experimental Manipulation for Experiment 2

In the classical conditioning experiment, the product involvement manipulation is similar to the first experiment. After filling consent form on the first page, subjects were asked to read the following statement carefully and assume that it was their current situation:

To successfully launch a new product named Juice the company will conduct a promotion at a grocery store. This company is trying to penetrate the juice market. When buying this product, you would receive a book of coupons good for a year from a grocery store.

Subjects were asked how much relevance the product has to them before the actual experiment. If they chose the number below zero (-2, -1 and 0), then go to the second page. The second page described the blank page. However, if they chose the number over zero (1 and 2), then go to the third page. Investigator asked them to read the following statement:

For participants highly involved with this product. Please pay careful attention to the video presentation. After watching the commercials related to the Juice, please carefully answer each question. Investigators will choose someone who makes the best response to the questions after collecting data. Then the investigators will pick the name from the group pool to win a prize.

For participants highly involved with the Juice brand, investigators encouraged them to pay careful attention to the video presentation. After watching the commercials related to Juice, subjects were asked to carefully answer each question. They were also told that after collecting data the investigators would chose the subject with the best response to win a prize.

Participants were exposed to a positive conditioning procedure in which the test brand was paired with favorable stimuli on the second repetition. Proper classical conditioning control procedures required that both the conditioning treatment and conditioning control groups be exposed the same number of times to both the US and CS, with only the conditioning treatment exposed to the CS/US contingency pairing. Participants in both the conditioning treatment and conditioning control groups were exposed to a video presentation in which the stimuli appeared interspersed among filler video clips.

The control group saw randomized video clips and the order of the video clips was used as a randomized selection of stimuli presentation. It was important that there was no systematic pairing of CS and US in this group.

3.2.6 Measure

3.2.6.1 Contingency Awareness

The contingency awareness measurement tools used previously developed scales, modified when necessary, to measure the variables in the study. The contingency awareness measure was used in prior research by Riluck and Till (2004) and Allen and Madden (1985). Its purpose was to determine whether participants became demand aware in the experiment. To determine contingency awareness, participants were asked to indicate which product (the TV, digital camera, computer, MP3 player, orange juice and milk) and which brand (SENS and Gator orange juice) was always shown before or with the animation with motion of the pleasant scenery and the video clip. Participants were then asked how certain they were of each of their responses and ranked their certainty on a 5-point scale ranging from absolutely certain to absolutely uncertain. Contingency aware participants were those who chose the correct product and brand and who were absolutely or somewhat certain of their responses. This operational definition matched the construct definition for awareness, which is the knowledge that the CS precedes the US.

The measures used to assess inferential belief formation were included as a means to investigate whether the participants formed beliefs about the CS (SENS and Gator orange juice) based on the US (affective animation with motion). If there was no difference in the salient beliefs between the conditioning and control group, this study

could assume that belief was not a factor in attitude formation. As suggested by Kim, Lim and Bhargava (1998) and Homer and Yoon (1992), participants estimated the likelihood that an MP3 player and soft drink possessed various attributes on four 7-point probability scales. Thus, the following extended measures were included: (1) sounds and tastes good, (2) is of good quality, (3) provides many different additional devices and ingredients, and (4) is reliable. Furthermore, beliefs about one of the filler brands was included to distract participants' attention from the focal brand and decrease their hypothesis guessing.

The measures were used to assess the participants' affective response to the US. The Self-Assessment Manikin (SAM) (Lang 1984) and the additional Self-Assessment AdSAM® (Morris 1995) consist of a graphic character used to represent the three dimensions of PAD. AdSAM® measured affective response was used to represent the three dimensions of PAD (e.g., pleasure, arousal and dominance). The measure consists of a graphic character arrayed along three different scales that include pleasure, arousal, and dominance. AdSAM® is in appendix B.

The study was measured the attitude toward the target brands (MP3 player for high involvement and fruit juice for low involvement) to gauge attitudes toward the animated commercials. The scales were adopted from Biehal, Stephens & Curlo (1992). The questionnaire asked subjects to evaluate ads using a semantic differential scale along with four measures anchored by the labels "unfavorable/favorable," "bad/good," "dislike/like," and "unpleasant/pleasant."

Attitude toward the brands (e.g., MP3 player and orange juice) were selected from a prior study (Holbrook & Batra 1987; Homer & Yoon 1992). Subjects were also asked

to evaluate the brands (using 7-points and a four-item measure), along with seven items anchored by the labels “good/bad,” “like very much/dislike very much,” “attractive/unattractive,” and “interesting/boring.”

To measure purchase intention, subjects were asked the question: “All things considered, if you are planning to purchase the brand on one of your next trips to a store, what are the chances that you would purchase the brand if it is available?” The purchase intention measure scales used were suggested by Bake (1999) as well as MacInnis and Stayman (1993). Each of the items was standardized and summed to represent the attribution of the product, attitude toward the ads, and brand and purchase behavior. Excellent reliability of each scale was also obtained (Cronbach alpha = .90).

3.2.6.2 Involvement manipulation check

The product involvement manipulation check used in the first experiment also was employed to the second experiment. The manipulation check measure consisted of six items adapted from Zaichkowsky (1985) to determine the extent to which the participants paid attention to a product offered via slide presentation and the stimuli. Subjects were asked how much relevance the product had to them before the actual experiment. And investigator told them to checkmark to the number what thoughts and feelings went through their mind about the product after watching the commercial. The items used in this study consisted of “useless/useful,” “uninterested/interested,” “worthless/valuable,” “unwanted/wanted,” and “irrelevant/relevant.” Excellent reliability of the scale was also obtained (Cronbach alpha = .93). A *t*-test indicated that the intended manipulation could be successful. High product involvement participants with the

product reported a mean of 5.1 compared to a mean of 2.8 for the low product involvement participants. This difference was found to be significant ($t = 23.4$, $p < .001$).

3.2.6.3 Conditioning requirement

To test the hypotheses in this study, participants first had to be successfully conditioned, as was evidenced by how the conditioning treatment fostered a more favorable attitude toward the ads and target brand than the conditioning control (Priluck and Till 2004).

Participants in the conditioning treatment who were exposed to the animated stimuli reported significantly more favorable attitudes toward the ads than those in the conditioning control group. More specifically, the low-involvement product group in the conditioning treatment had a mean of 5.0 compared to a mean of 3.4 for the conditioning control group. This difference was statistically significant ($t = 11.59$, $p < .001$) and indicates that this conditioning procedure successfully altered attitudes toward the animated commercials.

Participants in the conditioning treatment group who were exposed to the animated stimuli reported significantly more favorable attitudes toward the ads than those in the conditioning control group. Specifically, the conditioning treatment group had a mean of 5.2 compared to a mean of 3.6 for the conditioning control. This difference was statistically significant ($t = 10.6$, $p < .001$) and indicated that this conditioning procedure successfully altered attitudes toward the target brand.

3.2.6.4 Reliability of manipulations checks

In order to determine the validity a manipulation, reliable manipulation checks are a prerequisite (Perdue & Summers 1986). Nunally (1978) emphasized that the reliability

of a measure refers to the extent to which random error is absent. Reliability of the manipulation checks was assessed by calculating Cronbach's alpha, which is to determine internal consistency, the upper bound of reliability and coefficient beta, which is to determine unidimensionality and the lower bound of reliability for each index (John & Roedder 1981). Results indicated that the manipulation check measures had acceptable levels of internal consistency and unidimensionality. And all alpha and beta coefficient were over .80.

3.2.6.5 Construct validity

Nunnally (1978) suggested that an important first step in assessing the construct validity of a manipulation is to assess the extent to which it appears to look like it manipulates what it should manipulate. Also it is normally referred to as face validity. The three advertising practitioners and expert judges mentioned above indicated that the manipulation appeared to capture the different levels of animated characters and degree of product involvement.

3.2.6.6 Convergent validity

In addition to face validity, Perdue & Summers (1986) argued that a successful manipulation should possess convergent validity, which refers to the degree to which convergence exists between a construct and its manipulation. A successful manipulation can be assessed via manipulation checks that reflect the dimensions of the latent construct under study. In this situation, if the proposed two-group manipulation had convergent validity, subjects in the experimental group were expected to exhibit higher levels of attention to the animated commercials and would process the ad for a reason different from subjects assigned to the control group.

CHAPTER 4 RESULTS

4.1 Experiment 1

Descriptive statistics of dependent variables (e.g., cognitive attitude, pleasure, arousal, dominance as affective attitude, and conative attitude) were tabled by type of commercials such as clay, cartoon, and live action formatted commercial stimuli. Structural equation modeling was used to compare three-group path coefficients followed by a multi-group confirmatory factor analysis with a chi-square test. The multi group CFA analysis was conducted to examine the statistical different across two different groups.

Data were analyzed using a MANOVA on four dependent variables: emotional response, attitude toward the ads, and brand and purchase intention. A 3 (types of commercials: clay, cartoon and live action formatted commercials) x 2 (degree of involvement: high versus low) between-subjects factorial design was employed on linear combination of all dependent variables. Where necessary, a series of *t*-tests followed to examine the mean difference on two different groups and logit regression was conducted to test the specific hypotheses because a recall was coded as dichotomous variables (yes=1 and 0=no).

A score for each dependent variable was calculated by averaging the ratings across the multiple items used to measure that construct since the inter-item correlations for each of the scales, as measured by Cronbach's alpha, were large (ad attitude, .97; brand attitude, .95; and purchase intent, .94). Ad recall was not included in this analysis

as it was categorical. Tables 4-2, 4-3, and 4-4 illustrate the results of a MANOVA showing the ANOVA results, means, standard deviations and Wilks' Lambda.

Table 4-2. Means and Standard Deviations by Types of Ads

Treatment		Pleasure	Arousal	ATTA	ATTB	PI
Types	Involvement					
Clay animation	High	7.6(1.2/87)	5.9(1.5/87)	5.7(0.9/87)	5.5(0.8/87)	4.7(1.0/87)
	Low	6.4(1.8/79)	5.4(1.9/79)	4.7(1.2/79)	4.6(1.1/79)	3.5(1.4/79)
	Total	7.0(1.6/166)	5.7(1.7/166)	5.2(1.2/166)	5.0(1.1/166)	4.1(1.4/166)
Cartoon animation	High	7.2(1.4/20)	5.7(1.9/20)	5.6(0.9/20)	5.3(1.1/20)	4.0(1.9/20)
	Low	4.9(1.6/146)	3.8(1.5/146)	3.3(1.5/146)	3.2(1.3/146)	2.2(1.2/146)
	Total	5.2(1.8/166)	4.0(1.7/166)	3.6(1.6/166)	3.4(1.4/166)	2.4(1.4/166)
Live action	High	7.7(1.1/130)	6.3(1.7/130)	6.0(0.8/130)	5.8(0.8/130)	4.9(1.3/130)
	Low	6.5(1.4/36)	4.7(1.7/36)	4.4(1.2/36)	4.2(1.4/36)	3.2(1.4/36)
	Total	6.6(1.8/166)	6.0(1.8/166)	5.7(1.1/166)	5.5(1.1/166)	4.6(1.5/166)
Total	High	7.6(1.2/237)	6.1(1.7/237)	5.9(.86/237)	5.7(.86/237)	4.8(1.3/237)
	Low	5.6(1.8/261)	4.4(1.8/261)	3.9(1.5/261)	3.8(1.4/261)	2.7(1.4/261)
	Total	6.6(1.8/498)	5.2(1.9/498)	4.8(1.6/498)	4.7(1.9/498)	3.6(1.7/498)

*M(S.D/N)

Table 4-3. MANOVA Results

Treatments		Wilk's Lambda	F	<i>df</i>	<i>p</i>
Types of commercials	Dependent Variables	.900	5.31	(1,492)	.000
Involvement		.683	45.3		.000
Types x involvement		.938	3.18		.000

Table 4-4. Results of Between-Subjects

Independent Variables	Dependent Variables	MS	<i>df</i>	F	<i>p</i>
Types of commercials	Pleasure	46.4	2	20.1	.000
	Arousal	70.1	2	26.6	.000
	ATTAD	37.4	2	25.4	.000
	ATTAB	38.8	2	34.0	.000
	PI	3.85	2	3.62	.000
Degree of involvement	Pleasure	9.01	1	3.90	.000
	Arousal	16.2	1	6.15	.000
	ATTAD	11.0	1	7.50	.000
	ATTAB	16.2	1	5.32	.000
	PI	4.01	1	3.76	.000
Types x involvement ^a	Pleasure	9.01	2	3.90	.014
	Arousal	16.2	2	6.15	.003
	ATTAD	11.0	2	7.50	.001
	ATTAB	16.2	2	5.32	.000
	PI	4.01	2	3.76	.110

^aTypes of commercials (clay, cartoon and live action) x degree of involvement (high versus low)

Note: Scales for mean scores are from 1 to 7 with 7 being most positive. And scales of pleasure and arousal for mean scores are from 1 to 9 with 7 being most positive. N=498.

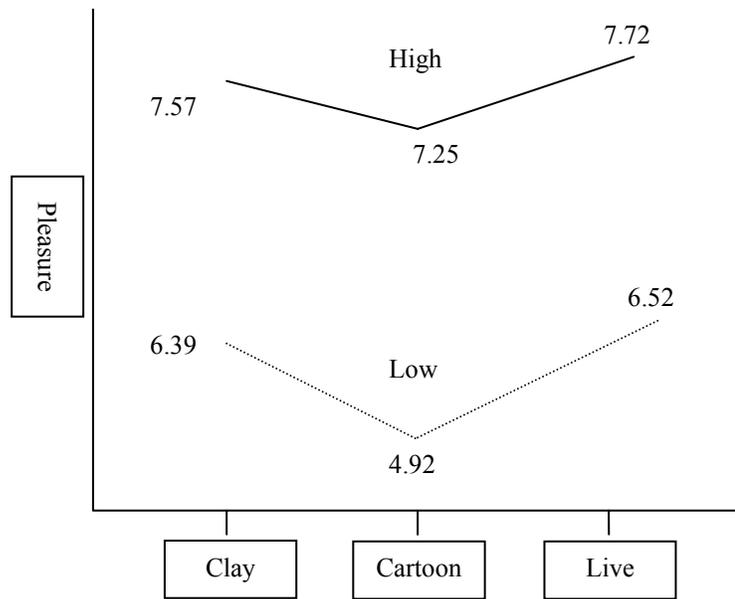


Figure 4-1. Interaction Effect of Emotional Response: Pleasure, and High vs. Low involvement

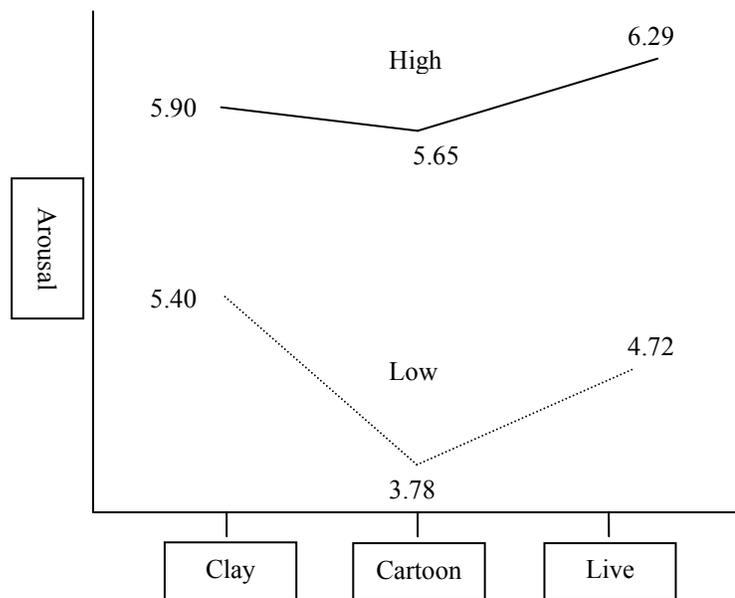


Figure 4-2. Interaction Effect of Emotional Response: Arousal, and High vs. Low involvement with product

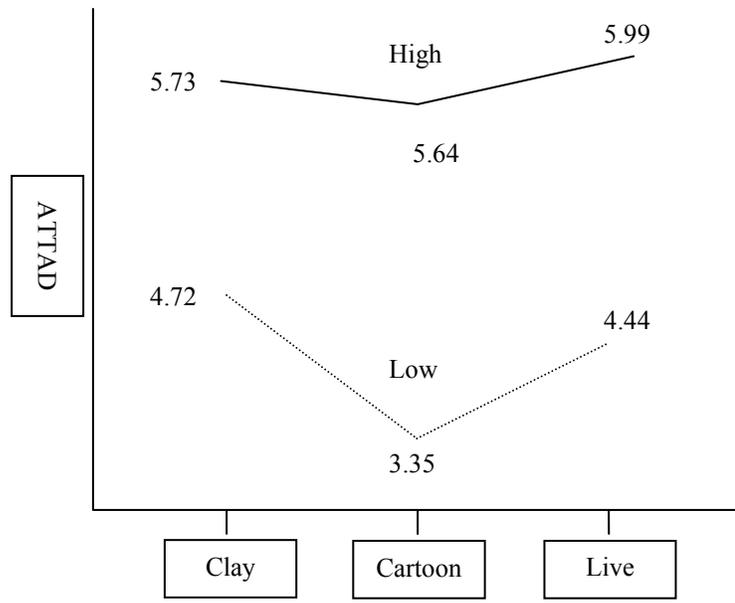


Figure 4-3. Interaction Effect of Attitude toward the Ad,
High vs. Low involvement with product

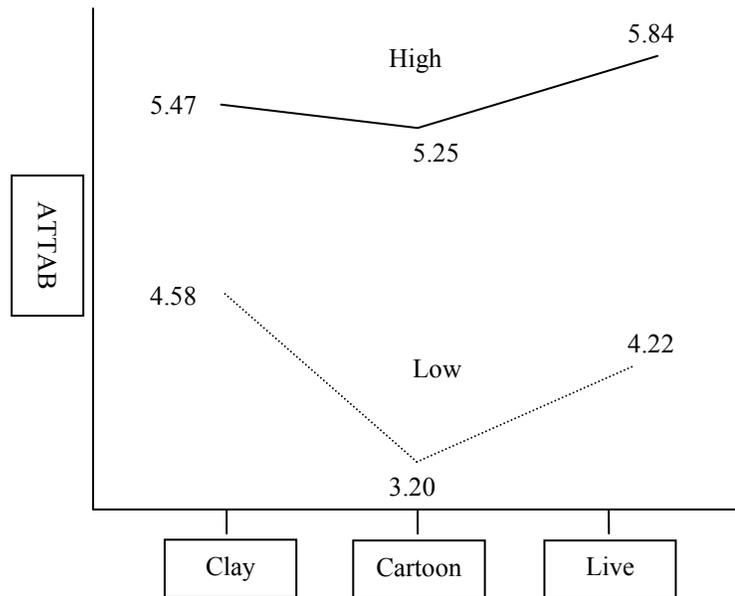


Figure 4-4. Interaction Effect of Attitude toward the Brand,
High vs. Low Involvement with product

4.1.1 Testing of Hypotheses for Animated Commercial Effects

Hypothesis 1 predicted that when subjects are highly involved with the product, exposure to live action formatted commercial results in hypotheses 1-1-a (higher

pleasure), 1-1-b (arousal), 1-1-c (a favorable attitude toward the ads), 1-1-d (brand), and 1-1-e (purchase intention) compared subjects exposed to clay and cartoon animated commercials. Also, exposure to clay animated commercial resulted in hypotheses 1-2-a (higher pleasure) and 1-2-b (arousal) as well as 1-2-c (a more favorable attitude toward the ad), 1-2-d (brand) and 1-2-e (purchase intention) compared to exposure to cartoon commercial.

Hypothesis 2 predicted that subjects who are modestly involved with the product, exposure to clay animated commercial will exhibit 2-1-a (higher pleasure), 2-1-b (higher arousal), 2-1-c (a favorable attitude toward the ad), 2-1-d (brand) and 2-1-e (purchase intention) compared to subjects exposed to live action formatted commercials. When compared to exposure to the cartoon commercial, exposure to the clay animated commercial resulted in 2-2-a (higher pleasure) and 2-2-b (arousal) as well as 2-2-c (a more favorable attitude toward the ad), 2-2-d (favorable attitude toward the brand), and 2-2-e (purchase intention).

As shown in Tables 4-2, 4-3 and Figure 4-1 through 4-4, to test H1 and H2, a MANOVA was first conducted with type of commercials and degree of involvement as the two independent factors, while the dependent variables were pleasure, arousal, ad attitude, brand attitude, and purchase intent. Also *t*-test was conducted to examine a simple mean difference for each mean combination on each dependent.

As hypothesized, the MANOVA revealed a statistically significant interaction between type of commercials and degree of involvement ($F = 3.18$, $df=(1,498)$, $p < .001$). The main effect was significant for each variable (types of commercials, $F = 5.31$, $df=(2,498)$, $p < .001$; degree of product involvement, $F = 45.3$, $df=(1, 498)$, $p < .001$). The

interaction was analyzed further by conducting MANOVAs as a function of types of commercials at each degree of involvement, providing support for H4. To understand better the nature of the interaction, separate, univariate analyses of variance were conducted for each of the dependent variables. As detailed hereafter, a statistically significant interaction of the type hypothesized was obtained for each dependent variable. However, the interaction on purchase intention was not statistically significant ($F = 3.76$, $p = .110$).

Pleasure. The ANOVA for pleasure shows that the interaction of commercial types by degree of involvement is significant ($F = 3.90$, $p = .014$; see Figure 4-1). An examination of the cell revealed that by using the simple effect of commercial types at each degree of product involvement, subjects in the high- product involvement group had a pleasure score when exposed to live action formatted commercial (mean = 7.7) and when exposed to clay animated (mean = 7.6) and cartoon commercials (mean=7.2). The result of simple mean difference analysis indicated that there were no significant difference of the perception of pleasure in comparing three different commercials ($t = .92$, $df = 215$, $p = .36$ comparison of live action to clay; $t = 1.1$, $df = 105$, $p = .29$ for comparison of clay to cartoon, and $t = 1.7$, $df = 148$, $p = .10$ for comparison of live-action to cartoon commercials). That is, the difference between means would not have been found to be statistically significant. Thus, hypotheses H1-1-a and H1-2-a were not supported.

Subjects in the low-product involvement group had a pleasure scores when exposed to clay animation based commercial (mean = 6.4) when exposed to cartoon based commercial (mean = 4.9) and live action formatted commercial (mean=6.5). The result of simple mean difference analysis indicated that there was no significant

difference of the perception of pleasure in comparing clay to live action formatted commercial ($t = .40$, $df = 113$, $p = .69$ for clay vs. live action). That is, the difference between means would not have been found to be statistically significant. Thus, hypotheses H2-1-a was not supported. The result of simple mean difference analysis indicated that there were significant differences of the perception of pleasure in comparing clay to cartoon and live action to cartoon commercials ($t = 6.2$, $df = 223$, $p < .05$ comparison of clay to cartoon, and $t = 5.4$, $df = 180$, $p < .05$ for live action vs. cartoon commercials). Consequently, the mean difference is statistically significant from 0. Thus, hypotheses H2-2-a was supported.

Arousal. The ANOVA for arousal shows that the interaction of commercial types by degree of involvement is significant ($F = 6.15$, $p < .003$; see Figure 4-2). An examination of the cell means suggests that by using the simple effect of commercial types at each degree of involvement, subjects in the high-involvement product group had arousal score when exposed to live action formatted commercial (mean = 6.3) when exposed to clay animated (mean = 5.9) and cartoon commercials (mean = 5.7). The result of simple mean difference analysis indicated that there was no differences of the perception of arousal in comparing three different commercials ($t = 1.7$, $df = 215$, $p = .08$ for comparison of live action to clay, $t = .62$, $df = 105$, $p = .54$ for clay vs. cartoon, and $t = 1.6$, $df = 148$, $p = .12$ for live action vs. cartoon commercials). That is, the difference between means would not have been found to be statistically significant. Thus, hypotheses H1-1-b and H1-2-b were not supported.

Subjects in the low product involvement had arousal score when exposed to clay animated commercial (mean = 5.4) when exposed to live action (mean = 4.7) and cartoon

commercials (mean = 3.8). The result of simple mean difference analysis indicated that there were no significant difference of the perception of arousal in comparing clay to live action formatted commercial ($t= 1.9$, $df=113$, $p=.06$ for clay vs. live action). That is, the difference between means would not have been found to be statistically significant. Thus, hypothesis H2-1-b was not supported. However, the result of simple mean difference analysis indicated that there were differences of the perception of arousal in comparing clay to cartoon and live action to cartoon ($t= 7.1$, $df=223$, $p<.05$ for clay vs. cartoon, and $t= 3.3$, $df= 180$, $p<.05$ for live action vs. cartoon commercials). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H2-2-b was supported.

Ad attitude. The ANOVA for attitude toward the ads shows that the interaction of commercial types by degree of involvement is significant ($F = 7.50$, $p < .001$; see Figure 4-3). An examination of the cell indicated that by using the simple effect of commercial types at each degree of involvement, subjects in the high product involvement had the perception of commercials when exposed to live action formatted commercial (mean = 6.0) when exposed to clay animated and cartoon animated commercials (mean = 5.7 and 5.6). The result of simple mean difference analysis indicated that there was a difference of the perception of commercials in comparing live action to clay animation ($t= 2.2$, $df=215$, $p<.05$ for live action vs. clay animation). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H1-1-c was supported. However, comparison of the perception of clay animated to cartoon animated commercials and live action to cartoon based commercials were not significant ($t= .41$, $df=105$, $p=.69$ for clay vs. cartoon and $t= 1.8$, $df=148$, $p=.07$ for live

action vs. cartoon). That is, the difference between means would not have been found to be statistically significant. Thus, hypotheses H1-2-c was not supported.

Subjects in the low product involvement had a perception of animated commercial score when exposed to clay animated commercial (mean = 4.7) when exposed to live action (mean = 4.4) and cartoon commercials (mean = 3.3). The result of simple mean difference analysis indicated that there were differences of the perception of commercials in comparing clay to cartoon and live action to cartoon ($t= 7.0$, $df=223$, $p<.05$ for clay vs. cartoon, and $t= 4.2$, $df=180$, $p<.05$ for live action vs. cartoon commercials). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H2-1-c and d were supported. However, there was a difference of the perception of arousal in comparing clay animation to live action formatted commercial ($t=.98$, $df=113$, $p=.33$ for clay vs. live action). That is, the difference between means would not have been found to be statistically significant. Thus, hypothesis H2-2-c was not supported.

Brand attitude. The ANOVA for brand attitude shows that the interaction of commercial types by degree of involvement is significant ($F = 5.32$, $p < .001$; see Figure 4-4). An examination of the cell indicated that by using the simple effect of commercial types at each degree of involvement, subjects in the high-involvement group had the perception of advertised brand when exposed to live action commercial (mean = 5.8) when exposed to the clay animated (mean = 5.5) and cartoon commercials (mean = 5.3).

The result of simple mean difference analysis indicated that there were significant differences of the perception of advertised brand in commercials in comparing live action to clay and live action to cartoon based commercial ($t= 3.4$, $df=215$, $p<.05$ for live action

vs. clay and $t= 2.9$, $df=148$, $p<.05$ for live action vs. cartoon). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H1-1-d was supported. However, there was no difference of the perception of advertised brand in commercial in comparing clay to cartoon animation based commercial ($t= .97$, $df=105$, $p=.34$ for clay vs. cartoon). That is, the difference between means would not have been found to be statistically significant. Thus, hypothesis H1-2-d was not supported.

Subjects in the low product involvement had the perception of advertised brand in commercials when exposed to the clay animated commercial (mean = 4.6) when exposed to live action (mean = 4.2) and cartoon commercials (mean=3.2). The result of simple mean difference analysis indicated that there were significant differences of the perception of advertised brand in commercials in comparing clay to live action and cartoon to live action based commercial ($t= 8.1$, $df=223$, $p<.05$ for clay vs. cartoon and $t= 4.5$, $df=180$, $p<.05$ for live action vs. cartoon). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H2-1-d was supported. However, there was no significant difference of the perception of advertised brand in commercial in comparing clay animation to cartoon animation based commercials ($t=1.6$, $df=113$, $p=.12$ for clay vs. cartoon). Regarding t -test, hypothesis H2-2-d was not supported.

Purchase intent. The analysis of variance shows that the interaction of commercial types by degree of involvement is not statistically significant ($F = 3.76$ $p >.110$). However, the main effect of types of commercials and degree of involvement is statistically significant on dependent variables ($F [2, 492] = 3.62$, $p < .001$ for types of commercials and $F [1, 492] = 3.76$, $p < .001$ for degree of product involvement).

An examination of the cell revealed that by using the simple effect of commercial types at each degree of involvement, subjects in the high product involvement group had the purchase intention score when exposed to live action commercial (mean = 4.9) when exposed to the clay animated (mean = 4.7) and cartoon commercials (mean = 4.0). The result of simple mean difference analysis indicated that there was no significant differences of the purchase intention in comparing live action to clay ($t= 1.5$, $df=215$, $p=.15$ for live action vs clay). That is, the difference between means would not have been found to be statistically significant. Thus, hypothesis H1-1-e was not supported. However, there were significant differences of the purchase intention in comparing clay to cartoon animation based commercial and cartoon to live action ($t= 2.1$, $df=105$, $p<.05$ for clay vs. cartoon and $t= 2.7$, $df=148$, $p<.05$ for live action vs. cartoon). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H1-2-e was supported.

Subjects in the low product involvement had purchase intention scores when exposed to the clay animated commercial (mean = 3.5) when exposed to live action (mean = 3.2) and cartoon commercials (mean=2.2). The result of simple mean different analysis indicated that there were no a significant difference of the purchase intention in comparing clay to live action ($t= .88$, $df=113$, $p=.38$ for clay vs. live action). That is, the difference between means would not have been found to be statistically significant. Thus, hypothesis H2-1-e was not supported. However, there was a significant difference of the purchase intention in comparing clay to cartoon and cartoon to live action ($t= 7.6$, $df=223$, $p<.05$ for clay vs. cartoon and $t= 4.8$, $df=180$, $p<.05$ for live action vs. cartoon). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis

H2-2-e was supported. As shown in Table 4-5, the results of the simple mean different test on three different commercial types are described.

Table 4-5. The Results of the Mean difference test in High vs. Low Product Involvement

Comparing Mean in the High Product Involvement					
	Pleasure	Arousal	ATTAD	ATTAB	PI
Live vs. Clay animation	7.7 ≠ 7.6 <i>t</i> = .92, <i>p</i> = .36	6.3 ≠ 5.9 <i>t</i> = 1.8, <i>p</i> = .08	6.0 > 5.7 <i>t</i> = 2.2, <i>p</i> < .05	5.8 > 5.5 <i>t</i> = 3.4, <i>p</i> < .05	4.9 ≠ 4.7 <i>t</i> = 1.5, <i>p</i> = .15
Live action vs. Cartoon	7.7 ≠ 7.3 <i>t</i> = 1.7, <i>p</i> = .09	6.3 ≠ 5.7 <i>t</i> = 1.6, <i>p</i> = .12	6.0 > 5.6 <i>t</i> = 1.8, <i>p</i> < .05	5.8 > 5.3 <i>t</i> = 2.9, <i>p</i> < .05	4.9 > 4.0 <i>t</i> = 2.7, <i>p</i> < .05
Clay vs. cartoon animation	7.6 ≠ 7.3 <i>t</i> = 1.1, <i>p</i> = .29	5.9 ≠ 5.7 <i>t</i> = .62, <i>p</i> = .54	5.7 ≠ 5.6 <i>t</i> = .41, <i>p</i> = .69	5.5 ≠ 5.3 <i>t</i> = .97, <i>p</i> = .34	4.7 > 4.0 <i>t</i> = 2.1, <i>p</i> < .05
Comparing Mean in the Low Product Involvement					
	Pleasure	Arousal	ATTAD	ATTAB	PI
Clay animation vs. Live action	6.4 ≠ 6.5 <i>t</i> = 4.0, <i>p</i> = .69	5.4 > 4.7 <i>t</i> = 1.9, <i>p</i> = .06	4.7 ≠ 4.4 <i>t</i> = .98, <i>p</i> = .33	4.6 ≠ 4.2 <i>t</i> = 1.6, <i>p</i> = .12	3.5 ≠ 3.2 <i>t</i> = .88, <i>p</i> = .38
Live action vs. Cartoon	6.5 > 4.9 <i>t</i> = 5.4, <i>p</i> < .05	4.7 > 3.8 <i>t</i> = 3.3, <i>p</i> < .05	4.4 > 3.3 <i>t</i> = 4.2, <i>p</i> < .05	4.2 > 3.2 <i>t</i> = 4.5, <i>p</i> < .05	3.2 > 2.2 <i>t</i> = 4.8, <i>p</i> < .05
Clay vs. cartoon animation	6.4 > 4.9 <i>t</i> = 6.2, <i>p</i> < .05	5.4 > 3.8 <i>t</i> = 7.1, <i>p</i> < .05	4.7 > 3.3 <i>t</i> = 7.0, <i>p</i> < .05	4.6 > 3.2 <i>t</i> = 8.1, <i>p</i> < .05	3.5 > 2.2 <i>t</i> = 7.6, <i>p</i> < .05

Note: ≠ is not significant

4.1.2 Results for Ad-Recall

H3 predicted that regardless of level of product involvement subjects are exposed to clay animated commercial, subjects will exhibit increased ad recall compared to those exposed to cartoon based or live action commercials.

As seen in the table 4-6 through 4-9, ad recall was measured by asking subjects to describe the names in the ads as they remembered them from the commercials. In order to accurate measure ad recall, measuring ad recall was conducted without showing participants the commercials again. For unaided ad recall measure, subjects were instructed to write down everything they could remember about the ads themselves such as a description of the ad, displayed product names, characters, story lines, theme, their cognition, and feelings. Ad recall scores were calculated by counting the number of ad components correctly recalled (Edell & Keller 1989; Jin 2003).

To measure recall, two independent coders analyzed the commercials using subjects' questionnaires and counted the number of correctly recalled items. The correlation coefficients for intercoder reliability on the ad recall exceeded .8, which was deemed acceptable. Recalled brand names were coded as 1 and brand names not recalled were recorded as 0. In this study, ad recall scores can be calculated by counting the number of ad components correctly recalled (Edell & Keller 1989; Jin 2003). Then each brand was evaluated using a chi-square test. Results showed that the largest group difference for ad-recall ($\chi^2 = 46.8$, $df=2$, $p < .05$) was observed in three commercials (see Table 4-7).

As shown the table 4-6 and 7, 81 out of 166 subjects recalled correctly the ad in clay animation. 57 out of 166 subjects who were recalled correctly the ad and brand in live action. 23 out of 166 subjects were recalled the ad and brand in cartoon. In participants highly involved with the product, there was rarely difference between clay animation and live action (43 out of 87 for clay animation vs.45 out of 79 for live action). 3 out of 20 subjects highly involvement in type of cartoon were recalled. In lower involvement the product, subject in type of clay animation were large recalled(38 out of 79) than other types of commercials (20 out of 146 for type of cartoon and 12 out of 36 for type of live action).

The result of *t*-test indicated that there were significantly different ($t= 4.5$, $p<.05$ for clay vs live action, $t= 3.8$, $p<.05$ for clay vs.cartoon) in high product involvement. In addition, the ad recall comparing on clay vs. cartoon and live action formatted commercials were statistically different ($t= 5.9$, $p<.05$ for clay vs.cartoon and $t=1 .8$,

$p=.08$ for cartoon vs. live action). In this study, p -value comparing clay to live action commercial is marginally significant ($p<.10$).

Table 4-6 through 4-9 illustrates the objective of this analysis, which was to identify the perceptions people have of different types of animated commercials that differ significantly between high and low involvement with the product. Because the dependent variable, ad recall, was a two-categorical variable, a binary logit analysis was the appropriate technique. These variables were expected to differentiate between high and low involvement with product and among types of commercials.

The ad-recall data were analyzed by logistic regression. The analysis was conducted with recall as the criterion variables and designed commercials, degree of product involvement, and the interaction between the two as predictors. The logistic analysis revealed that the two-way interaction among types of commercials and degree of involvement was predicted to lead to ad recall. Ad recall was supported by a significant two-way interaction (types of commercials, $\beta = .413$, $Wald / \chi^2 = 11.7$, $p < .05$; degree of involvement, $\beta = .674$, $Wald / \chi^2 = 11.3$, $p < .05$). Thus, hypothesis H3 was supported.

Table 4-6. Ad Recall Crosstabulation and Chi-Square Tests

	Ad Recall		Total
	Yes	None	
Clay animation	81	85	166
Cartoon animation	23	143	166
Live action	57	109	166
Total	337	161	498

*Pearson $\chi^2 = 46.8$, $df=2$, $p < .05$

Table 4-7. Group difference for Ad Recall in Types of Commercials

Types	Treatment			Ad Recall	M	S.D	N	Total
	Involvement	M	S.D					
Clay animation (n=166)	High (n=87)	3.5	1.3	Yes	4.7	1.1	43	Yes (n=81) None (n=85)
				None	4.6	1.0	44	
	Low (n=79)	3.2	1.5	Yes	3.6	1.3	38	
				None	3.3	1.5	41	
Cartoon animation (n=166)	High (n=20)	2.3	1.3	Yes	6.0	1.7	3	Yes (n=23) None (n=143)
				None	3.7	1.7	17	
	Low (n=146)	2.2	1.1	Yes	2.1	.86	20	
				None	2.2	1.2	126	
Live action (n=166)	High (n=130)	2.7	1.3	Yes	4.9	1.1	45	Yes (n=57) None (n=109)
				None	4.9	1.4	85	
	Low (n=36)	2.7	1.3	Yes	3.5	1.3	12	
				None	3.1	1.5	24	

Table 4-8. Binary Logit Analysis in experiment 1

Overall model fit			
Goodness of fit measures	Value		
-2LL	607.29		
Cox & Snell R ²	.038		
Nagelkerke R ²	.054		
	χ^2	<i>df</i>	<i>Sig.</i>
Hosmer & Lemeshow	29.267	4	.000

Table 4-9. Variables in the Equation

Variable	B	S.E.	<i>Wald / χ^2</i>	<i>Sig.</i>
Types of Commercials	.413	.121	11.7	.001
Degree of Involvement	.674	.200	11.3	.001
Constant	.937	.356	6.93	.008

4.1.3 Multi Group CFA Analysis in Experiment 1

RQ₁ addressed how the tripartite attitudinal dimension can be explained in different types of commercials and if there are differences in the model of tripartite attitudinal dimensions in different types of commercials (e.g., clay, cartoon and live action commercials).

The values of selected fit indexes for the multi-sample analysis of the path model with equality-constrained direct effects are reported in Tables 4-5 and 4-6. The values of the comparative fit index (CFI), Bentler-Bonett Normed (NFI), Bentler-Bonett Nonnormed

(NNFI) are over .96 and standardized RMR (SRMR), and root-mean-square error of approximation (RMSEA) were satisfied by this criteria (below .05 and .08) respectively. It can be said that this model fit is acceptable because the result would satisfy the criteria.

Table 4-10 and 4-11 and Figure 4-5 show the unstandardized and standardized solutions. Generally, the unstandardized path coefficients are appropriate for between group comparisons while standardized path coefficients are generally used to compare paths within groups. The basic rationale for a multiple group path analysis is the same whether the model is recursive or nonrecursive. Statistical significance of a modification index thus indicates a group difference on that parameter. Values of modification indexes for this analysis are reported in tables 4-8 and 4-9 and they indicate that there is no significant group difference on each path ($p > .05$). Within three samples, all paths (e.g., cognition on affection and conation, affection on conation) are statistically significant ($p < .05$). However, the unstandardized path coefficients of cognition on affection in cartoon commercial ($\gamma = .713$) is highly scored compared to other commercials ($\gamma = .629$ for live action and $\gamma = .548$ for clay animated commercial). The unstandardized path coefficients of cognition on conation in clay animated commercial ($\gamma = .657$) is highly scored compared to other commercials ($\gamma = .571$ for live action formatted and $\gamma = .408$ for cartoon animated commercial). The unstandardized path coefficients of affection on conation in live action formatted commercial ($\beta = .336$) is highly scored compared to other commercials ($\beta = .304$ for clay animated and $\beta = .303$ for cartoon commercial).

In clay animation model, the standardized path coefficient of cognition to affection was $\gamma = .462$, of cognition to conation was $\gamma = .417$, and of affection to conation

was $\beta = .274$. The standardized path coefficients of cognition to conation is highly scored compared to affection to conation ($\gamma = .417$ and $\beta = .274$).

In cartoon animation model, the standardized path coefficient of cognition to affection was $\gamma = .603$, of cognition to conation was $\gamma = .419$, and of affection to conation was $\beta = .368$. The standardized path coefficients of cognition to conation is highly scored compared to affection to conation ($\gamma = .419$ and $\beta = .368$).

In live action commercial model, the standardized path coefficient of cognition to affection was $\gamma = .540$, of cognition to conation was $\gamma = .408$, and of affection to conation was $\beta = .280$. The standardized path coefficients of cognition to conation is highly scored compared to affection to conation ($\gamma = .408$ and $\beta = .280$).

Figure 4-5. Tripartite Attitudinal Dimensions in clay, cartoon and non-animated commercials

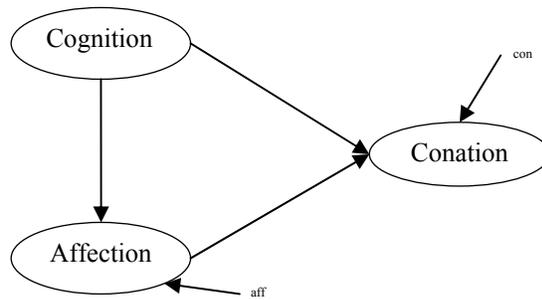


Table 4-10. Correlations Matrix in Experiment 1

Types of Commercials		Correlations, Means, and Standard Deviations				
		1	2	3	M	S.D
Clay animated commercial	1 Cognition		.19	.28	5.2	.97
	2 Affection			.49	5.9	.87
	3 Conation				4.1	1.4
Cartoon commercial	1 Cognition		.41	.36	3.5	1.4
	2 Affection			.61	4.8	1.0
	3 Conation				2.4	1.4
Live action commercial	1 Cognition		.34	.37	5.6	1.0
	2 Affection			.53	6.0	.88
	3 Conation				4.6	1.5

Note: Correlations above .36 are statistically significant at $p < .01$, .19 is statistically significant at $p < .05$

Table 4-11. Modification indexes for equality-constrained direct effects

Direct Effect	Path coefficients from separate sample analyses ^a			Modification Index χ^2
	Clay			1. Clay vs. Cartoon
1. Cognition → Affection	.548 (.462)*			0.37
2. Cognition → Conation	.657 (.417)*			2.60
3. Affection → Conation	.304 (.274)*			0.84
		Cartoon		2. Cartoon vs. Live action
1. Cognition → Affection		.713 (.603)*		0.23
2. Cognition → Conation		.408 (.419)*		1.83
3. Affection → Conation		.303 (.368)*		0.40
			Live action	3. Live action vs. Clay
1. Cognition → Affection			.629 (.540)*	0.17
2. Cognition → Conation			.571 (.408)*	0.05
3. Affection → Conation			.336 (.280)*	0.00

Note. Goodness of Fit:

1. χ^2 : 77.7(df:69), χ^2 /df(1.12), CFI;.99,NFI;.96, NNFI;.98, SRMR;.050, RMSEA;.028

2. χ^2 : 74.2(df:66), χ^2 /df(1.12), CFI;.99,NFI;.97, NNFI;.99, SRMR;.053, RMSEA;.027

3. χ^2 : 70.7(df:62), χ^2 /df(1.13), CFI;.99,NFI;.96, NNFI;.99, SRMR;.054, RMSEA;.029

^a Unstandardized (standardized), * $p \leq .05$

4.2 Experiment 2

4.2.1 Results for the Conditioning Experiment

Box's test checked the assumption of equality of covariance matrices. For these data, p was 0.05, thus the homogeneity assumption was violated, but only marginally. In the low-product categories, data was analyzed using a MANOVA on the dependent variables, attitude toward the commercial, attitude toward the brand, and purchase intention. The study conducted a 2 (experimental vs. control group) x 2 (high and low product involvement) between subjects factorial design with two levels for each of the two independent variables, experimental vs. control group and level of product involvement (high vs. low). A MANOVA was used to examine differences between the two different conditions on linear combinations of all dependent variables, and a between subject designed ANOVA was performed on each dependent variable. Where necessary, a series of t -tests followed to examine the mean difference on two different groups and

the logit regression was conducted to test the specific hypotheses because contingency awareness was coded as dichotomous variables (awareness=1 and 0=unawareness). Table 4-12, 4-13 and 4-14 illustrates the results of a MANOVA showing the ANOVA results, means, standard deviations, and Wilks' Lambda.

Table 4-12. Means and Standard Deviations by Condition

Treatment		Pleasure	Arousal	ATTA	ATTB	PI
Groups	Involvement					
Conditioning treatment	High	7.4 (1.2/119)	5.8 (1.6/119)	5.6 (0.9/119)	5.4 (0.7/119)	4.6 (1.1/119)
	Low	6.0 (2.1/47)	5.3 (1.8/47)	4.4 (1.3/47)	4.2 (1.2/47)	2.9 (1.3/47)
	Total	7.0(1.6/166)	5.7(1.7/166)	5.2(1.2/166)	1.0(1.1/166)	4.1(1.4/166)
Conditioning control	High	6.9 (1.4/35)	5.3 (1.7/35)	5.2 (0.9/35)	4.9 (1.0/35)	4.1 (1.3/35)
	Low	4.8 (1.6/130)	3.7 (1.5/130)	3.2 (1.5/130)	3.0 (1.2/130)	2.9 (0.7/130)
	Total	5.2(1.8/165)	4.0(1.7/165)	3.6(1.6/165)	3.4(1.4/165)	3.2(1.0/165)
Total	High	7.3(1.3/154)	5.7(1.7/154)	5.5(.98/154)	5.3/.87/154)	4.5(1.1/154)
	Low	5.1(1.8/177)	4.1(1.7/177)	3.5(1.5/177)	3.3(1.3/177)	2.9(.94/177)
	Total	6.1(1.9/331)	4.8(1.9/331)	4.4(1.6/331)	4.2(1.5/331)	3.6(1.3/331)

*M(S.D/N)

Table 4-13. Manova Results

Treatments		Wilk's Lambda	F	<i>d.f</i>	<i>p</i>
Conditioning	Dependent Variables	.872	9.51	(1,327)	.000
Valence of involvement		.620	39.5		.000
Conditioning X Involvement		.943	3.88		.002

Table 4-14. Results of Between-subjects

Independent Variables	Dependent Variables	MS	<i>df</i>	F	<i>p</i>
Conditioning	Pleasure	46.4	1	20.1	.000
	Arousal	70.1	1	26.6	.000
	ATTAD	37.4	1	25.4	.000
	ATTAB	38.8	1	34.0	.000
	Purchase Intention	3.85	1	3.62	.058
Degree of involvement	Pleasure	189.5	1	82.2	.000
	Arousal	67.6	1	25.6	.000
	ATTAD	156.0	1	105.9	.000
	ATTAB	144.3	1	126.4	.000
	Purchase Intention	114.3	1	107.5	.000
Conditioning X Involvement	Pleasure	9.01	1	3.90	.049
	Arousal	16.2	1	6.15	.014
	ATTAD	11.0	1	7.50	.007
	ATTAB	16.2	1	5.32	.022
	Purchase Intention	4.01	1	3.76	.053

^aConditioning (conditioning treatment and conditioning control) x degree of Involvement (high and low)

Note: Scales for mean scores are from 1 to 7 with 7 being most positive. And scales of pleasure and arousal for mean scores are from 1 to 9 with 7 being most positive. n=331.

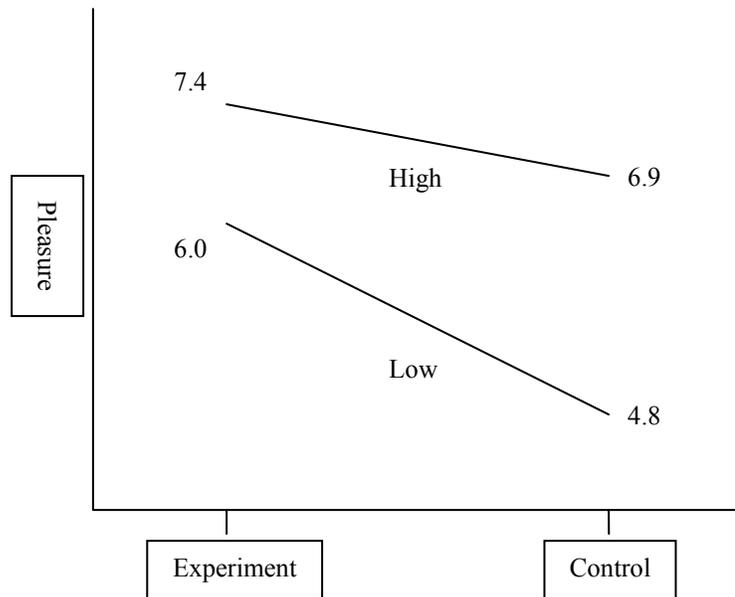


Figure 4-6. Interaction Effect of Emotional Response: Pleasure
Degree of Involvement x experiment and control group

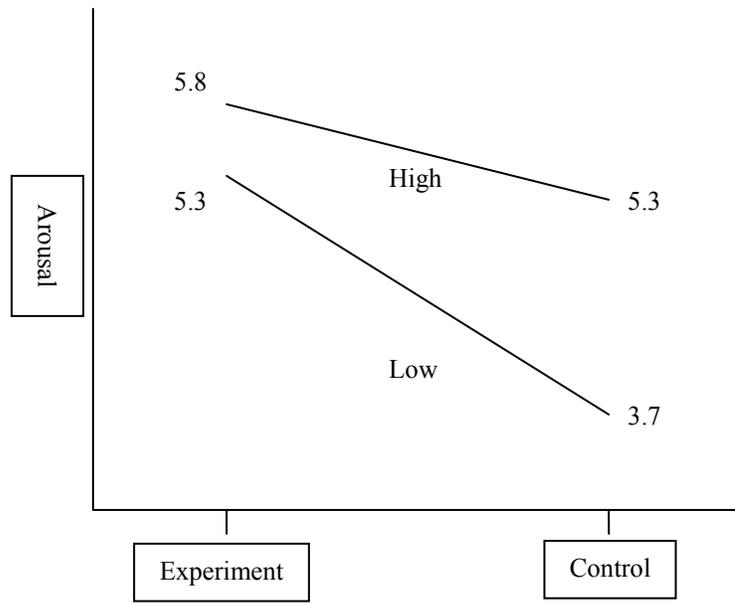


Figure 4-7. Interaction Effect of Emotional Response: Arousal

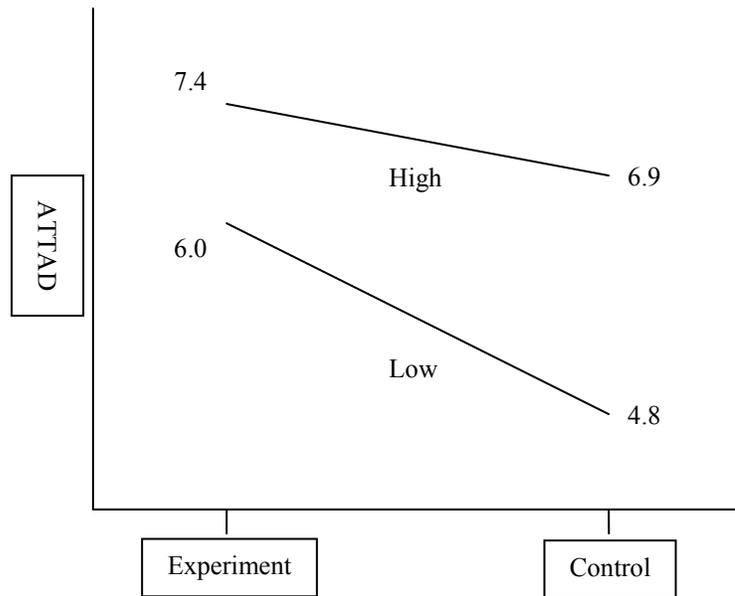


Figure 4-8. Interaction Effect of Attitude toward the Ad

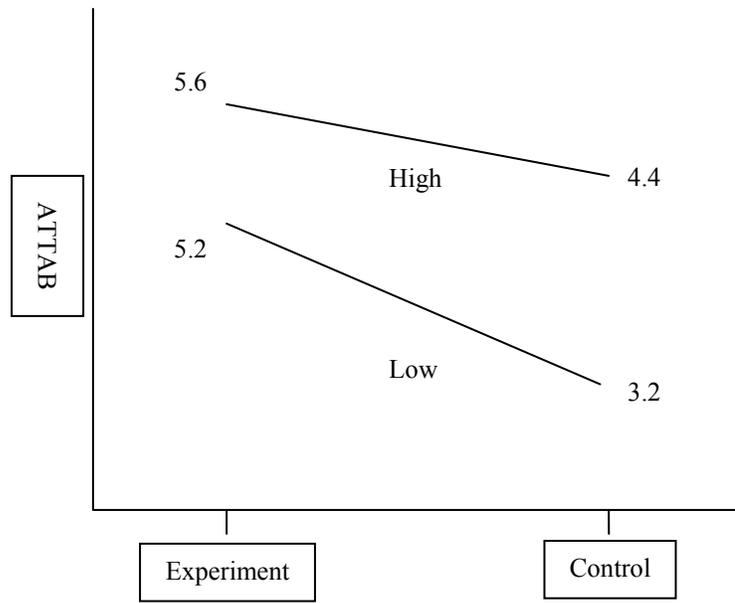


Figure 4-9. Interaction Effect of Attitude toward the Brand

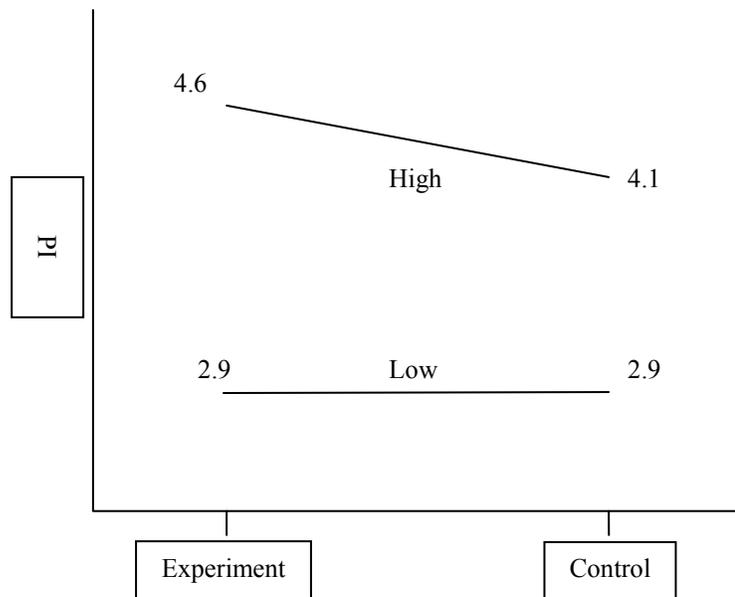


Figure 4-10. Interaction Effect of Purchase Intent

Hypothesis 5 predicted that when all subjects are exposed to a classical conditioning procedure in which a target brand (CS) is systematically paired with an animated stimulus (US); subjects with high product involvement will exhibit; 5-a) higher

levels of pleasure and 5-b) arousal; 5-c) more favorable attitudes toward the ad and 5-d) target brand, and 5-e) higher purchase intention in conditioning experimental group than in the control group. In addition, subjects with low product involvement will exhibit; 5-f) higher levels of pleasure and 5-g) arousal; 5-h) more favorable attitudes toward the ad and 5-i) target brand, and 5-j) higher purchase intention in conditioning experimental group than in the control group.

As shown in the Tables 4-12 through 4-14 and Figure 4-6 through 4-10, a MANOVA was first conducted with the two different groups and the degree of product involvement as the two independent factors with pleasure, arousal, ad attitude, brand attitude, and purchase intent as the dependent variables. Also *t*-test was conducted to examine a simple mean difference for each mean combination on each dependent.

As hypothesized, the MANOVA revealed a statistically significant interaction between the two different groups and degree of involvement ($F = 3.88$, $df=(1,331)$, $p < .05$). The main effect was significant for both variables (the two different groups, $F = 9.51$, $df=(1,331)$, $p < .001$; degree of product involvement, $F = 39.5$, $df=(1,331)$, $p < .001$). The interaction was analyzed further by conducting MANOVAs as a function of the two different groups at each degree of involvement. To understand better the nature of the interaction, separate, univariate analyses of variance were conducted for each of the dependent variables. As detailed hereafter, a statistically significant interaction of the type hypothesized was obtained for each dependent variable.

Pleasure. The ANOVA for pleasure shows that the interaction of the two different groups by degree of product involvement is significant ($F = 3.90$, $p < .05$; see Table 4-12 and Figure 4-6). An examination of the cell means that by using the simple

effect of the two different groups at each degree of product involvement, the subjects in the high-product involvement group had a higher pleasure score when exposed to classical conditioning (mean = 7.4) than subjects in the control group (mean = 6.9). The result of simple mean difference analysis indicated that there was significant different pleasure mean scores in comparing two different groups ($t=2.0$, $df=152$, $p<.05$ for comparison of experiment to control group). The mean difference is statistically significant from 0. Thus, hypothesis H5-a was supported.

In addition, subjects in the low product involvement group exhibited higher pleasure when exposed to classical conditioning (mean = 6.0) than subjects in the control group (mean = 4.8). The result of simple mean difference analysis indicated that there was significant different pleasure mean scores in comparing two different groups ($t=4.3$, $df=175$, $p<.05$ for experiment vs. control group). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H5-f was supported.

Arousal. The ANOVA for arousal shows that the interaction of the two different groups by degree of product involvement is significant ($F = 6.15$, $p <.05$; see Figure 4-7). An examination of the cell means indicated that by using the simple effect of the two different groups at each degree of product involvement, subjects in the high product involvement group had arousal score when exposed to classical conditioning (mean = 5.8) and when subjects exposed to control treatment (mean = 5.3). The result of simple mean difference analysis indicated that there was no significant different arousal mean scores in comparing two different groups ($t=1.8$, $df=152$, $p=.08$ for experiment vs. control group). That is, the difference between means would not have been found to be statistically significant. Thus, hypothesis H5-b was not supported.

Subjects in the low product involvement group exhibited higher pleasure when exposed to classical conditioning (mean = 5.3) than subjects in the control group (mean = 3.7). The result of simple mean difference analysis indicated that there was significant different arousal mean scores in comparing two different groups ($t=5.7$, $df=175$, $p<.05$ for experiment vs.control group). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H5-g was supported.

Ad attitude. The ANOVA for attitude toward the ad shows that the interaction of the two different groups by degree of product involvement is significant ($F = 7.50$, $p < .05$; see Figure 4-8). An examination of the cell shows that by using the simple effect of the two different groups at each degree of product involvement, subjects in the high product involvement group had the perception of the animated commercial when exposed to classical conditioning (mean = 5.6) when subjects exposed to the controlled treatment (mean = 5.2). The result of simple mean difference analysis indicated that there was no significant different perception of the animated commercial mean scores in comparing two different groups ($t=1.9$, $df=152$, $p=.06$ for experiment vs.control group). That is, the difference between means would not have been found to be statistically significant. Thus, hypothesis H5-c was not supported.

Subjects in the low-involvement group tended to exhibit a favorable attitude toward the ads when exposed to classical conditioning (mean = 4.4) than subjects in the control group (mean = 3.2). The result of simple mean difference analysis indicated that there was significant different the perception of the animated commercial mean scores in comparing two different groups ($t=5.1$, $df=175$, $p<.05$ for experiment vs.control group).

Consequently, the mean difference is statistically significant from 0. Thus hypothesis H5-h was supported.

Brand attitude. The ANOVA for brand attitude shows that the interaction of two different groups by degree of involvement is significant ($F = 5.32, p < .05$; see Figure 4-9). An examination of the cell means that by using the simple effect of the two different groups at each degree of product involvement, the subjects in the high product involvement group had a more favorable attitude toward the brand when exposed to classical conditioning (mean = 5.4) than subjects in the control group (mean = 4.9). The result of simple mean difference analysis indicated that there was significant different perception of the advertised brand mean scores in comparing two different groups ($t=3.0, df=152, p<.05$ for experiment vs.control group). Thus, hypothesis H5-d was supported.

For low product involvement, subjects in the low product involvement group tended to exhibit a favorable attitude toward the ads when exposed to classical conditioning (mean = 4.2) compared to subjects in the control group (mean = 3.0). The result of simple mean difference analysis indicated that there was significant different the perception of the advertised brand mean scores in comparing two different groups ($t=5.3, df=175, p<.05$ for experiment vs.control group). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H5-i was supported.

Purchase intent. The analysis of variance shows that the interaction of commercial types by degree of product involvement was not statistical significant ($F = 3.76 p=.053$; see Figure 4-10). An examination of the cell means that by using the simple effect of the two different groups at each degree of involvement, subjects in the high product involvement group had a more favorable purchase intention when exposed to

classical conditioning (mean = 4.6) than subjects in the control groups (mean = 4.1). The result of simple mean difference analysis indicated that there was significant different mean scores of purchase intention in comparing two different groups ($t=2.4$, $df=152$, $p<.05$ for experiment vs.control group). Consequently, the mean difference is statistically significant from 0. Thus, hypothesis H5-e was supported.

For low product involvement, subjects in the low product involvement group had mean scores of purchase intention when exposed to classical conditioning (mean = 2.94) and when subjects exposed to the controlled treatment (mean = 2.93). The result of simple mean difference analysis indicated that there was not significantly different mean scores of purchase intention in comparing two different groups ($t= .03$, $df=175$, $p=.10$ for experiment vs.control group). That is, the difference between means would not have been found to be statistically significant. Thus, hypothesis H5-j was not supported.

Table-15. The Results of the Mean difference test in High vs. Low Product Involvement

Comparing Mean in the High Product Involvement					
	Pleasure	Arousal	ATTAD	ATTAB	PI
Conditioning vs.Control	7.4 > 6.9 $t= 2.0$, $p<.05$	5.8 ≠ 5.3 $t= 1.8$, $p=.08$	5.6 ≠ 5.2 $t= 1.9$, $p=.06$	5.4 > 4.9 $t= 3.0$, $p<.05$	4.6 > 4.1 $t= 2.4$, $p<.05$
Comparing Mean in the Low Product Involvement					
	Pleasure	Arousal	ATTAD	ATTAB	PI
Conditioning vs.Control	6.0 > 4.8 $t= 4.3$, $p<.05$	5.3 > 3.7 $t= 5.7$, $p<.05$	4.4 > 3.2 $t= 5.1$, $p<.05$	4.2 > 3.0 $t= 5.3$, $p<.05$	2.94 ≠ 2.93 $t= .03$, $p=.10$

Note: ≠ is not significant

4.2.2 Analysis of Contingency Awareness

Hypothesis 6 predicted that subjects with high product involvement exhibit an increased likelihood of recognizing the contingency than subjects in a control group or those exposed to a classical conditioning procedure in which a target brand (CS) is systematically paired with an affective animation stimulus (US). Also, hypothesis 6-1 expected that contingency awareness moderates the relationship between classical

conditioning procedures and attitudes toward the ad, target brand (CS), and purchase intention.

The objective of this analysis was to identify perceptions people have of animated commercials that differ significantly between high and low product involvement and between two groups. Because the dependent variable, contingency awareness, was a two-categorical variable, a binary logit analysis was the appropriate technique. These variables were expected to differentiate between high and low product involvement and between groups. Contingency awareness was coded 0 if it was corrected and 1 if it was not corrected.

As shown Table 4-16, 4-17 and 4-18, the contingency awareness data were analyzed by logistic regression. The analysis was conducted with degree of involvement, and the interaction between the two as predictors. The logistic analysis revealed that the two-way interaction between two different groups and the degree of product involvement was predicted to lead to contingency awareness in this study. Contingency awareness was supported by a significant two-way interaction ($\beta = 2.12$, $Wald / \chi^2 = 33.8$, $p < .05$ for two groups; $\beta = .729$, $Wald / \chi^2 = 5.08$, $p < .05$ for degree of product involvement). The *t*-test indicated that there were a significant group difference between comparing classical vs. controlled treatment in the high product involvement group ($\chi^2 = 2.6$, $p < .05$) and in the low product involvement group ($\chi^2 = 6.8$, $p < .05$). Thus, hypotheses 6 and 6-1 were supported.

Table 4-16. Contingency Awareness on the Classical Conditioning Experiment

Treatment/groups	Involvement /n		Contingency Awareness /n		Total
Experiment N=166	High	119	Aware	36	Aware: 60 Unaware: 106
			Unaware	83	
	Low	47	Aware	24	
			Unaware	23	
Control N=165	High	35	Aware	3	Total Aware: 15 Unaware: 121
			Unaware	32	
	Low	130	Aware	12	
			Unaware	118	

Note: $\chi^2=2.6$, $p<.05$ for comparing classical vs. controlled treatment groups in the high product involvement group. And $\chi^2=6.8$, $p<.05$ for comparing classical vs. controlled treatment group in the low product involvement group. Awareness is a categorical variable and logistic regression was used.

Table 4-17. Binary Logit Analysis for Contingency Awareness

Overall model fit			
Goodness of fit measures	Value		
-2LL	312.54		
Cox & Snell R ²	.118		
Nagelkerke R ²	.180		
	χ^2	<i>df</i>	<i>Sig.</i>
Hosmer & Lemeshow	1.126	2	.570

Table 4-18. Variables in the Equation

Variable	B	S.E.	Wald / χ^2	<i>Sig.</i>
Two Groups	2.12	.365	33.8	.000
Degree of Involvement	.729	.324	5.08	.024
Constant	-2.79	.842	11.0	.001

Hypothesis 7 predicted that in the animation stimulus, subjects exposed to the target brand (CS) paired with the animation stimulus (US), and who were aware of the contingency relationship between the target brand (CS) and animation stimulus (US), would develop more favorable attitudes toward the ad and target brand than subjects who were unaware of the contingency relationship.

As seen in Table 4-20, subjects categorized (e.g., awareness or unawareness) as aware of the CS/US contingency developed more favorable attitudes toward the ad and target brand than those who were unaware. The differences were significant (ad, $t = 3.52$,

$p < .001$; target brand, $t = 2.72$, $p < .05$). Thus, hypothesis 7 was supported. However, the additional finding is that purchase intention was not statistically significant ($t = 1.55$, $p = .121$).

Table 4-19. Mean and Standard Deviations by Contingency Awareness

Variables	A.C	N	M	S.D
ATTAD	Unawareness	256	4.3	1.7
	Awareness	75	5.0	1.1
	Total	331	4.4	1.6
ATTAB	Unawareness	256	4.1	1.6
	Awareness	75	4.7	1.2
	Total	331	4.2	1.5
PI	Unawareness	256	3.6	1.3
	Awareness	75	3.8	1.3
	Total	331	3.6	1.3

Table 4-20. Contingency Effect on ATTAD, Brand, and Purchase Intention

Variables		<i>df</i>	S.S	M.S	F	<i>t</i>	<i>Sig.</i>
ATTAD	Between Groups	1	31.3	31.3	12.4	3.52	.000
	Within Groups	329	829.0	2.52			
ATTAB	Between Groups	1	16.1	16.1	7.42	2.72	.007
	Within Groups	329	715.5	2.18			
PI	Between Groups	1	3.95	3.96	2.42	1.55	.121
	Within Groups	329	538.7	1.64			

4.2.3 Multi Group CFA Analysis

The unstandardized and standardized solutions are reported in each table. The basic rationale for a multiple group path analysis is the same whether the model is recursive or nonrecursive. By imposing cross-group equality constraints, the significance of group differences on any model parameter or set of parameters can be tested. A cross-group equality constraint forces the computer to derive equal estimates of that parameter for all samples. A common tactic in a multiple group path analysis is to impose cross-group equality constraints on the path coefficients. The χ^2 of the model with its path coefficients constrained to equality is contrasted against that of the unconstrained model.

If the relative fit of the constrained model is much worse than that of the unconstrained model, the direct effects differ across the groups (Kline1998, p.183).

To check whether these indexes of overall model fit were causing more specific effects, modification indexes were included and univariate Lagrange multipliers were derived to test group differences on each of the three or nine path coefficients. When a model is analyzed across multiple groups with equality constraints, values of modification indexes estimate the amount by which the overall χ^2 would decrease if the associated parameter was estimated freely in each sample. Statistical significance of a modification index thus indicates a group difference on that parameter. Values of modification indexes for this analysis are reported in each table and they indicate a significant group difference on the cognition→conation path and another that falls just short of significance ($p = .005$) on the affection→conation path. To investigate group differences further, each of the seven path coefficients were derived separately within each group in subsequent runs with a model-fitting program; these values are also reported in the table18. Based on modification indexes, we can deduce that animated stimuli plays a larger role for the experiment group than for the control group (Kline1998, p.184).

A multiple group analysis can be conducted with either recursive or nonrecursive path models. The simplest way to conduct a multi-sample path analysis is to estimate the model separately for each group and then compare the unstandardized solutions. A more formal way is to use a model-fitting program that imposes equality constraints on parameter estimates across the groups. A common practice is to impose cross-group equality constraints only on the path coefficients; values of other parameters (e.g.,

variances of the exogenous variables) are freely estimated with each sample. Tests of the significance for each constrained parameter indicate whether the fit of the constrained model is worse than the fit of the model without that constraint. If so, then a significant group difference on that parameter is indicated. If several such results are found, then whatever variable is represented by group membership may moderate the effects represented in the path model (Kline1998, p.184).

RQ₂ asked if the tripartite attitudinal model could be explained in classical conditioning when using animated commercial stimuli, and if there were different values of the tripartite attitudinal model between experiment and control groups. The tripartite attitudinal dimensions could be applied in classical conditioning research and lead to understandings about consumer purchase behavior when consumers are exposed to animated commercial stimuli. Will different values of the tripartite attitudinal model be existed in between experiments and control groups and two different product involvement groups?

The study was attempted to test the hypothesis by using multi-group analyses. The multi-group exploratory procedure, EQS 5,7b for Windows (Bentler 1994), was performed for a simultaneous estimation of the measurement and structural model and because it allowed for analyzing several relationships simultaneously. Multi-group analyses follow the steps suggested by Kline (1998) before comparing the measurement model and structural model in each group. Then, the two-step approach was employed to test each measurement model. Covariance matrices for each group were submitted to a model fitting program for a multi-group CFA.

Assumption check. Before constructing the measurement and structural models, several underlying assumptions for SEM were checked. The Skewness and Kurtosis values ± 2.58 (Hair et al. ,1998), variance inflation of factors (VIF) of four predictor variables less than 10.0, tolerance scores of the variables larger than .10, Eigenvalues larger than .01, and condition indexes less than 100 were verified. Thus, the assumptions were within acceptable boundaries.

For both groups, the psychometric properties (e.g., discriminant validity and reliability) of measures were examined before a comparison of coefficients of each path (Morris et al., 2002). Anderson and Gerbing (1988) suggested that all measurement models should be examined by applying discriminant validity and convergent validity before construct measurement and the structural model. In addition, the procedure described by Fornell and Larcker (1981) was used to assess the discriminant validity of the measures. The average variance extracted ranged from .73 to .92 and the squared correlation ranged from 0.11 to .50. As an indication of discriminant validity, the average variance extracted for each construct was found to be higher than the squared correlation between that construct and any other construct. Thus, the discriminant validity was established in this model. An average variance extracted above .50 was appropriate to suggest convergent validity. Therefore, the convergent validity was established for two groups in this study.

Lagrange multiplier (LM) tests were used to improve significance by adding the correlated errors terms (error covariances) and to decrease significance in fit by applying a theoretical structural model (Bentler 1994). The two-step approach was used to test the

measurement model before estimating the structural relations between the variables (Anderson and Gerbing 1988).

The values of selected fit indexes for the multisample analysis of the path model with equality-constrained direct effects are reported in Tables 4-20 and 4-21. The values of the comparative fit index (CFI), Bentler-Bonett Normed (NFI), Bentler-Bonett Nonnormed (NNFI) were over .96; standardized RMR (SRMR) and root-mean-square error of approximation (RMSEA) were satisfied with criteria (below .05 and .08) respectively. Thus, it can be said that this model fit was acceptable.

The unstandardized and standardized solutions are reported in Tables 4-21 and 4-22 as well as in Figure 4-11. Generally, the unstandardized path coefficients are appropriate for between group comparisons. Also standardized path coefficients are generally used to compare paths within groups. The basic rationale for a multiple group path analysis is the same whether the model is recursive or nonrecursive. Statistical significance of a modification index thus indicates a group difference on that parameter. Values of modification indexes for this analysis are reported in Table 4-22 and they indicate a significant group difference on cognition → conation ($p < .05$) as well as on affection → conation ($p < .05$). Consequently, the hierarchical effect communication model can be explained in a classical conditioning procedure when explaining consumer attitude formation.

Within the two samples, all paths (e.g., cognition on affection and conation, affection on conation) are statistically significant ($p < .05$). In addition, the unstandardized path coefficients of cognition on affection in the classical conditioning procedure ($\gamma = .548$) were lower than for the control group ($\gamma = .721$). The unstandardized

path coefficients of cognition on conation in the classical conditioning procedure ($\gamma = .657$) were higher than in the control group ($\gamma = .173$). The unstandardized path coefficients of affection on conation in the classical conditioning procedure ($\beta = .364$) were higher than in the control group ($\beta = .182$).

In conditioning model, the standardized path coefficient of cognition to affection was $\gamma = .462$, of cognition to conation was $\gamma = .417$, and of affection to conation was $\beta = .274$. The standardized path coefficients of cognition to conation is highly scored compared to affection to conation ($\gamma = .417$ and $\beta = .274$).

In controlled model, the standardized path coefficient of cognition to affection was $\gamma = .620$, of cognition to conation was $\gamma = .255$, and of affection to conation was $\beta = .313$. The standardized path coefficients of affection to conation is highly scored compared to cognition to conation ($\beta = .313$ and $\gamma = .255$).

Figure 4-11. Comparing Tripartite Attitudinal Dimensions in Experiment vs. Control Group in Cognition First Model

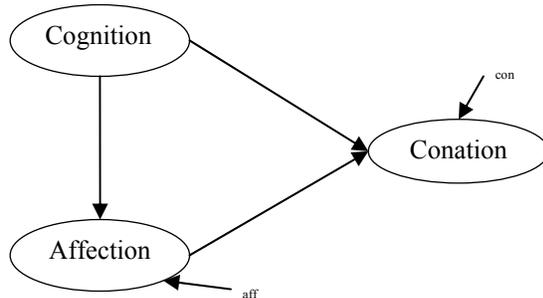


Table 4-21. Multiple Group Path Analysis of a Recursive Path Model of Tripartite Attitudinal Dimensions

Correlations, Means, and Standard Deviations		1	2	3	Control (n=165)	
					M	S.D
1	Cognition				3.4	1.4
2	Affection	.28	.38	.37	4.8	1.0
3	Conation	.49	.17	.43	3.2	1.0
Experiment (n=166)	M	5.1	5.9	4.1		
	S.D	.97	.87	1.4		

Note: Correlations above .28 are statistically significant at $p < .001$, .17 is statistically significant at $p < .05$

Table 4-22. Modification Indexes for Equality-Constrained Direct Effects

Direct Effect	Modification Index χ^2	Path coefficients from separate sample analyses ^a	
		Experiment	Control
Cognition → Affection	0.79	.548 (.462)*	.721 (.620)*
Cognition → Conation	13.7*	.657 (.417)*	.173 (.255)*
Affection → Conation	7.14*	.364 (.274)*	.182 (.313)*

Note. Goodness of Fit: χ^2 : 86.7(df:67), χ^2 /df(1.30), CFI;.99,NFI;.95, NNFI;.99, SRMR;.084, and RMSEA;.042, ^a Unstandardized (standardized), and * $p \leq .05$

As shown the Table 4-23, 4-24 and Figure 4-12, paths of affection on cognition and conation, affection on conation are statistically significant ($p < .05$). Statistical significance of a modification index thus indicates a group difference on that parameter. Values of modification indexes for this analysis are reported in Table 4-23 and they indicate a significant group difference on cognition → conation ($p < .05$) as well as on affection → conation ($p < .05$). Consequently, the hierarchical effect communication model can be explained in a classical conditioning procedure when explaining consumer attitude formation. In addition, the unstandardized path coefficients of cognition on conation in the classical conditioning procedure ($\beta = .547$) were higher than for the control group ($\beta = .193$). The unstandardized path coefficients of affection on conation in the classical conditioning procedure ($\gamma = .622$) were higher than in the control group ($\gamma = .208$).

In conditioning model, the standardized path coefficient of affection to cognition was $\gamma = .468$, of affection to conation was $\gamma = .260$, and of cognition to conation was $\beta = .376$. The standardized path coefficients of cognition to conation is highly scored compared to affection to conation ($\beta = .376$ and $\gamma = .260$).

In controlled model, the standardized path coefficient of affection to cognition was $\gamma = .617$, of affection to conation was $\gamma = .255$, and of cognition to conation was β

= .344. The standardized path coefficients of cognition to conation is highly scored compared to affection to conation ($\beta = .344$ and $\gamma = .255$).

Figure 4-12. Comparing Tripartite Attitudinal Dimensions in Experiment vs. Control Group in Affection First Model

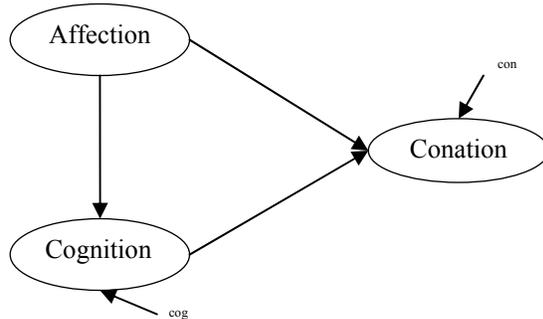


Table 4-23. Multiple Group Path Analysis of a Recursive Path Model of Tripartite Attitudinal Dimensions

Correlations, Means, and Standard Deviations		1	2	3	Control (n=165)	
					M	S.D
1	Affection				4.8	1.0
2	Cognition	.28			3.4	1.4
3	Conation	.17	.49		3.2	1.0
Experiment (n=166)	M	5.9	5.1	4.1		
	S.D	.87	.97	1.4		

Note: Correlations above .28 are statistically significant at $p < .001$, .17 is statistically significant at $p < .05$

Table 4-24. Modification Indexes for Equality-Constrained Direct Effects

Direct Effect	Modification Index χ^2	Path coefficients from separate sample analyses ^a	
		Experiment	Control
Affection → Cognition	2.23	.770 (.468)*	.895 (.617)*
Affection → Conation	8.72*	.622 (.260)*	.208 (.255)*
Cognition → Conation	12.1*	.547 (.376)*	.193 (.344)*

Note. Goodness of Fit: $\chi^2 : 80.0(df:64)$, $\chi^2/df(1.60)$, CFI;.99,NFI;.96, NNFI;.99, SRMR;.086, and RMSEA;.039, ^a Unstandardized (standardized), and * $p \leq .05$

As shown the Table 4-25, 4-26 and Figure 4-13, paths of affection on cognition and conation, affection on conation are statistically significant ($p < .05$). Statistical significance of a modification index thus indicates a group difference on that parameter. Values of modification indexes for this analysis are reported in Table 4-26 and they indicate a significant group difference on cognition → conation ($p < .05$) as well as on

affection \rightarrow conation ($p < .05$). Consequently, the hierarchical effect communication model can be explained in the high product involvement when explaining consumer attitude formation. In addition, the unstandardized path coefficients of cognition on conation in the high product involvement ($\gamma = .361$) was higher than for the low product involvement control group ($\gamma = -.021$). The unstandardized path coefficients of affection on conation in the high product involvement ($\beta = .429$) was higher than in the low product involvement ($\beta = .141$).

In high product involvement model, the standardized path coefficient of cognition to affection was $\gamma = .407$, of cognition to conation was $\gamma = .319$, and of affection to conation was $\beta = .319$. The standardized path coefficients of cognition to conation is same scored compared to affection to conation ($\gamma = .319$ and $\beta = .319$).

In low product involvement model, the standardized path coefficient of cognition to affection was $\gamma = .602$, of cognition to conation was $\gamma = -.052$, and of affection to conation was $\beta = .343$. The standardized path coefficients of affection to conation is highly scored compared to cognition to conation ($\beta = .343$ and $\gamma = -.052$).

Figure 4-13. Comparing Tripartite Attitudinal Dimensions in high versus low Product Involvement Group in Cognition First Model

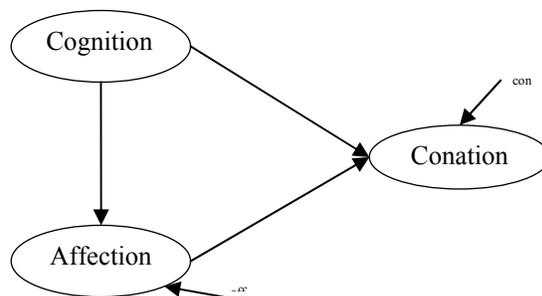


Table 4-25. Multiple Group Path Analysis of a Recursive Path Model of Tripartite Attitudinal Dimensions

Correlations, Means, and Standard Deviations		1	2	3	High (n=154)	
					M	SD
1 Cognition			.46	.33	5.3	.85
2 Affection		.18		.27	6.5	1.2
3 Conation		.45	.11		4.5	1.1
Low (n=177)	M	3.5	4.6	2.9		
	SD	1.4	1.5	.94		

Note: Correlations above .18 are statistically significant at $p < .05$

Table 4-26. Modification indexes for equality-constrained direct effects

Direct Effect	Modification Index χ^2	Path coefficients from separate sample analyses ^a	
		High involvement	Low involvement
Cognition → Affection	0.27	.482(.407)*	.604(.602)*
Cognition → Conation	11.1*	.361(.319)*	-.021(-.052)
Affection → Conation	11.1*	.429(.319)*	.141(.343)*

Note. Goodness of Fit: $\chi^2 : 78.0(df:46)$, $\chi^2/df(1.70)$, CFI;.98,NFI;.95, NNFI;.97, SRMR;.11, RMSEA;.065

^a Unstandardized (standardized), * $p \leq .05$

Note2: CFI: Comparative Fit Index, NFI=Bentler-Bonett Normmed Fit Index; NNFI=Non-Normed Fit Index.

As shown the Table 4-27, 4-28 and Figure 4-14, analysis was based affection first model, also paths of affection on cognition and conation, affection on conation are statistically significant ($p < .05$). Statistical significance of a modification index thus indicates a group difference on that parameter. Values of modification indexes for this analysis are reported in Table 4-28 and they indicate a significant group difference on cognition → conation ($p < .05$) as well as on affection → conation ($p < .05$). Consequently, the hierarchical effect communication model can be explained in the high product involvement when explaining consumer attitude formation. In addition, the unstandardized path coefficients of cognition on conation in the high product involvement ($\beta = .846$) was higher than for the low product involvement control group ($\beta = .148$). The unstandardized path coefficients of affection on conation in the high product involvement ($\gamma = .137$) was higher than in the low product involvement ($\gamma = -.024$).

In high product involvement model, the standardized path coefficient of affection to cognition was $\gamma = .500$, of affection to conation was $\gamma = .090$, and of cognition to conation was $\beta = .597$. The standardized path coefficients of cognition to conation is highly scored compared to affection to conation ($\beta = .597$ and $\gamma = .090$).

In low product involvement model, the standardized path coefficient of affection to cognition was $\gamma = .602$, of affection to conation was $\gamma = -.052$, and of cognition to conation was $\beta = .343$. The standardized path coefficients of cognition to conation is highly scored compared to affection to conation ($\beta = .343$ and $\gamma = -.052$).

Figure 4-14. Comparing Tripartite Attitudinal Dimensions in high and low Product Involvement Group in Affection First Model

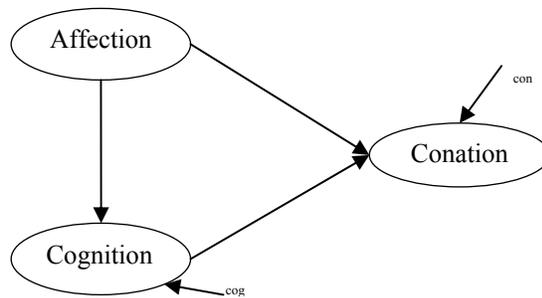


Table 4-27. Multiple Group Path Analysis of a Recursive Path Model of Tripartite Attitudinal Dimensions

Correlations, Means, and Standard Deviations		1	2	3	High (n=154)	
					M	SD
1 Affection			.33	.46	6.5	1.2
2 Cognition		.45		.27	5.3	.85
3 Conation		.18	.11		4.5	1.1
Low (n=177)	M	4.6	3.5	2.9		
	SD	1.5	1.4	.94		

Note: Correlations above .18 are statistically significant at $p < .05$

Table 4-28. Modification indexes for equality-constrained direct effects

Direct Effect	Modification Index χ^2	Path coefficients from separate sample analyses ^a	
		High involvement	Low involvement
Affection → Cognition	2.45	.541(.500)	.650(.602)*
Affection → Conation	11.3*	.137(.090)*	-.024(-.052)
Cognition → Conation	14.0*	.846(.597)*	.148(.343)*

Note. Goodness of Fit: $\chi^2 : 99.6(df:47)$, $\chi^2/df(2.11)$, CFI;.97,NFI;.93, NNFI;.94, SRMR;.12, RMSEA;.082

^a Unstandardized (standardized) / * $p \leq .05$

CHAPTER 5 DISCUSSION

5-1 Discussion of Experiment 1

The first experiment examined the relationship between exposure to animated stimuli and responses to subsequent ad (e.g., emotional responses, attitudes toward the ads, brand, purchase intention, and ad recall). An experimental design was used to determine if there were significant group differences in cognition, affection, and conation. The experiment measured four sub-categories—dependent variables; attitude toward the advertising, brand attitude, purchaser intention, and advertising recall,—for clay and cartoon animated commercials as well as live action based commercial.

Structural equation modeling tested whether the hierarchical communication effect model in the three types of diversely formatted commercials (e.g., clay, cartoon and live action) could be explained differently in cognitive and affective responses, and whether the clay animation commercial drove viewers to different cognition, affection, and conation responses.

Hypothesis 1 predicted that when subjects are highly involved with the product, exposure to live action formatted commercial results in higher pleasure, arousal, a favorable attitude toward the ad, brand, and purchase intention compared subjects exposed to clay animated and cartoon commercials. Also, exposure to clay animated commercial resulted in hypotheses higher pleasure and arousal as well as a more favorable attitude toward the ad, brand and purchase intention compared to exposure to cartoon commercial.

The results for the pleasure dimensions indicated that there were no difference among consumer pleasure and arousal as emotional responses to three different commercials such as live action based, clay animation and cartoon animated commercials in high product involvement.

Product involvement should be stronger when a consumer perceives a strong association between the product's image and attributes, and the consumer's own personal goals and values (Celsi and Olsn 1988). This means that the consumers who are highly involved with the product are more likely to obtain the satisfaction or seek personal value from the product.

The pleasure was for the purpose of this study considered as people's emotion status such as joy, pride, affection, and gratitude. Also arousal was usually measured by the level of intensity or involvement vis-à-vis these feeling. As Lazarus (1991) pointed out that pleasure is transformed into emotional distress or satisfaction only as a result of appraisals of their significance. Pleasure can be caused by a number of concrete, specific physical stimuli whose capacity to product these sensory reactions is innate. The results of this study implied that consumers who are highly involved with the product have a tendency to seek pleasure through product information in commercials rather than pursuing their pleasure through different advertising formats.

There were no differences among the perception of arousal to three different commercials in high product involvement. Some scholars argued that the arousal dimension is related to the vigor of the behavioral disposition that is currently active and can range from a level of extreme emergency to that of calm expediency (Bradley et al. 1992, p.388). It can be interpreted that the consumer arousal system is related with

advertising stimuli which influence on consumer arousal as well as arousal plays as the preposition of behavior. Consequently consumers arousal system might be more affected by other advertising elements (e.g., background music, appeal techniques, etc.) than evoking their arousal through different advertising formats when they are highly involved with the product.

Regarding attitude toward the commercial, the results revealed that consumers who are highly involved with the product had a more positive perception of commercials when exposed to non-animated commercials (i.e., with human actors) than two different animated commercials. Consumers, who are highly involved with the product, are more likely to respond to live action based commercials than animated commercials. Consumers who have a favorable perception of the ad are more likely to rely on the reality based ads including real visual and image motion as compared to other ad formats.

Concerning attitude toward the brand, the result of this study implied that consumer highly involved with the product are more likely to have a positive perception of the brand when exposed to live action based commercial as compared to exposure to other commercials. The results can be explained in that the perception of the brand in high product involvement is closely related to reality what human can made from live action formatted commercial. Animation in commercials allows us to create imagination, consumer evaluation of the brand could be enhanced by considering their cognitive processing of the product. Consumer attitude toward the brand results from their careful attempts to comprehend and evaluate the brand-relevant content of the ads.

Purchase behavior was not differentially affected when comparing consumer exposure to human based versus clay-animated commercials. Consumers highly involved

with the product have a more favorable purchase intention when exposed to live action and clay animated commercials than when exposed to cartoon animated commercial. Consumers simply identify with human actors more than they do with imaginary actors, and will tend to mimic the former's purchase behavior more.

Hypothesis 2 predicted that subjects who have lower product involvement exhibit higher arousal, a favorable attitude toward the ad, brand and purchase intention compared to subjects exposed to cartoon and live action commercials. However, subjects who were exposed to live-action-based commercial exhibited higher pleasure compared to those who exposed to clay animated and cartoon commercials. When compared to exposure to cartoon commercial, exposure to clay animated commercial resulted in higher pleasure and arousal as well as a more favorable attitude toward the ad, brand, and purchase intention.

Live action based versus clay animation based commercial did not differentially affect consumer pleasure in their product involvement. Consumers who are exposed to live action based commercial experience higher pleasure than when exposed to cartoon animated commercial. In addition, clay animation is better than cartoon at evoking consumer pleasure. Consumers with low product involvement experienced higher arousal when exposed to clay animated commercial than when exposed to live action and cartoon commercials. This finding is associated with Gorn's (1982) study, which found that consumers who have low product involvement are more likely to respond to background, characters, pleasant visual scenery and motion in commercials. Moreover, emotional responses can be better explained in low involvement situations because individuals who

are highly involved with the product have tendency to respond to affective stimuli in advertising (Gorn 1982).

The ELM model can be useful in explaining that people who are exposed to the affective stimuli in commercials follow a peripheral processing route because these elements requires less cognitive efforts on viewer's part. Clay animation's can produce a unique style of image motion and movement, and, therefore, could be an effective design tool to capture viewers' attention and affected viewers' arousal and pleasure. In low involvement with the product, the consumer arousal system is more affected by design components in commercials.

Comparing clay animation versus live action based commercials in consumer attitude formation, there were no difference in attitude toward the ad, brand and purchase intention. Consumers recognized clay animation as an effective advertising design tool because clay animation is produced by using real image motion from human resource in real world.

Consumers with low product involvement had a positive perception of animated commercials when exposed to clay animated and live action commercials than when exposed to cartoon commercial. Clay animation and live action based commercial could be an effective advertising format for increasing consumer perception of commercial with low product involvement. Consumers are more likely to form their reality-based attitude in response to clay animation which captures strong image motion like the live action, which can be made in live action commercials.

Consumers with low product involvement had a more favorable attitude toward the brand when exposed to the clay animated and live action commercials than when

exposed to cartoon commercials. Clay animation and live action formatted commercial could be an effective advertising format for increasing the consumer attribution of commercial with low product involvement. When consumers evaluate brand, they were more likely to consider advertising components such as the motion-based reality.

Consumers with low product involvement had a more favorable purchase intention when exposed to the clay animated and live action commercials than when exposed to cartoon commercials. Clay animation and live action based commercial could be an effective advertising format for increasing the likelihood of purchase with low product involvement.

Comparing clay animation versus live action based commercials, consumer responses were rarely different. Furniss (2006) noted that clay animation can be better at reproducing authentic human-like incremental movement and the illusion of unbroken motion. Clay animation, as is a means of creating a complete re-presentation of reality (Wilson 2005) because it can re-produce the true nature of what we are seeing on screen. Therefore, the well-designed clay animation can decrease gaps when reality simply doesn't look real enough.

As discussed earlier, affective stimuli (e.g., background music, pleasant visual scenes, characters, and images) in an advertisement follow a peripheral processing route, as these elements require less cognitive effort on the viewer's part. Because animated stimuli rely heavily on these more aesthetic factors, animated stimuli would be more effective working under the lower-level peripheral processing routes on viewer persuasion. And, consumer emotional responses, perception of animated commercial and purchase likelihood can be maximized when using clay animated stimuli because clay

animation is considered as the well-liked advertising design elements. It can affect consumer information processing by creating positive emotional responses, increasing the memory of elements used in commercials, and creating a favorable judgment of the advertising message.

As Hypothesis 3 predicted, when consumers exhibited increased ad recall when they are exposed to clay animation than when exposed to live action based commercial and cartoon based commercial with both high and low product involvement. Clay animation more effectively works to affect to consumer memory.

Traditional involvement theory would suggest higher involvement leads to increased memory for advertising message due to an elaborately processed ad message, and such increased ad recall, in turn, leads to enduring consumer attitudes toward the ad and brand (Gardner et al. 1985; Petty et al. 1983). Also some scholars argue that the high product involvement could produce better ad recall than the low product involvement (Briggs and Hollis 1997). However, this study suggests that ad recall is affected by advertising styles and format. Animation in commercial had an important role in recalling the ad. Also animated motion in advertising could be a better effective design tool to capture consumer attention or influence consumer memory.

Given animation terminology refers to the medium as a means of creating a complete re-presentation of reality (Wilson 2005), this finding suggest that animation stimuli has a more powerful explanation consumer attitude formation and behavioral action as much as real human when peoples are exposed to pleasant scenery in commercials. In other words, evidence from this study, animation is used to fill in the

gaps when reality simply doesn't look real enough. The results of this study implied that animation has a potential benefits in current movie and advertising industry.

The implication of the results is that clay animation has more evocable character and image than those of cartoons because cartoons are made by the traditional two-dimension technique. Clay animation in advertising is associated with the influence of lower-level peripheral processing routes on viewer persuasion because animated stimuli rely heavily on viewer's aesthetic factors (Furniss 1998). Therefore, this study suggests that production in film emphasizes the importance of incorporating appropriate motion in commercials. Consequently, it can be implied that better-designed animation influences consumer emotional responses, increasing their positive attitude formation.

The implication from the results of multi-group CFA analysis is that consumer cognitive effort processing is higher than affective effort processing on behavioral expectations. Higher cognitive processing is closely correlated to consumer subsequent behavior when exposed to the commercials in this study. On the other hand, affective processing is closely related with perception of ad.

In the second experiment, the animation effect could be discussed in the results of the classical conditioning mechanism.

5.2 Discussion of Experiment 2

The traditional classical conditioning paradigm suggests that positive attitudes toward an advertised product (i.e., a conditioned stimulus or CS) might develop through its association in a commercial with other stimuli that are reacted to positively (i.e., an unconditioned stimulus or US). Therefore, Experiment 2 anticipates that the animation (US) can drive favorable attitudes toward the brand.

The impact of product information in a commercial on beliefs and attitudes would typically be interpreted within an information processing framework. It is suggested here that a classical conditioning framework could account for the potential impact of background features, such as animation, on product attitudes.

Hypothesis 5 predicted that, regardless of product involvement, subjects would exhibit positive emotional responses (e.g., pleasure, arousal), and attitude formation (e.g., a more favorable attitude toward the ad, brand, and purchase intention) than when exposed to classical conditioning in which a target brand (CS) is systematically paired with an affective animation stimulus (US) compared to a control group.

The findings from the classical conditioning study implied that consumer who are exposed to the classical conditioning procedure are more likely to have higher pleasure and arousal levels, and a positive attitude toward the animated commercial, and the brand, and thus a more favorable purchase intention as compared to those of conditioning controls in both high and low product involvement when using animation as stimuli. It can be implied that the classical conditioning mechanism would be better explained under the peripheral processing routes and low product categories, such as soft drinks when using animation as affective stimuli. Also, the findings could be confirmed that animation plays an important role in a classical conditioning paradigm.

This study suggests that a favorable attitude toward the advertised brand might develop through the product association with animation stimuli, which consumers relate in a positive manner. Animation used in this study also acts as the potential unconditioned stimuli in commercials.

Hypothesis 6 predicted that in the animation stimulus, subjects exposed to the target brand (CS) paired with the animation stimulus (US), and who are aware of the contingency relationship between the target brand (CS) and animation stimulus (US), would develop more favorable attitudes toward the ads and target brand than subjects who are unaware of this contingency relationship. The results revealed that subjects categorized as aware of the CS/US contingency developed more favorable attitudes toward the ad and target brand than those who were unaware.

Awareness of the CS-US relationship is a necessary condition for classical conditioning and contingency awareness exists when experimental subjects know that CS and US have been related temporally in an experiment's sequencing of these two events (Shimp 1991, p.159). Assuming attitude formation is a cognitive process, contingency awareness is considered as a prerequisite for successful attitude change (Allen and Janiszewski 1989; Priluck and Till 2004; Shimp et al. 1991). Consistent with the above, the findings of Allen and Janiszewski (1989) emphasize that classical conditioning mechanism theory would agree that contingency awareness acts as a mediator in the conditioning process. The findings of this study suggest that the role of awareness become more important when subjects develop a positive attitude toward the animated commercial and the target brand via their cognitive efforts. Also, a high level of awareness occurs when subjects are highly involved with the product. The findings of this study suggest that successful attitude formation via classical conditioning occurs when participants are highly involved with the product. Such subjects are, thus, more likely to generate attitude toward the animated commercial and the target brand.

The results of multi group CFA analysis in involvement and classical conditioning suggest that animation in advertising would be effective working under a classical conditioning mechanism. Also animation stimuli had an important role in high product involvement. Consequently, the hierarchical effect communication model can be explained in the classical conditioning procedure when explaining consumer attitude formation. This finding from the results' view of the animated commercial hierarchy is implicitly a causal relationship from cognition to affect, and affect to conation in classical and high product involvement groups.

The implication from the results of multi-group CFA analysis is that consumer cognitive effort processing is higher than affective effort processing on behavioral expectations in classical conditioning experiments. However, consumer affective processing is higher than cognitive processing on behavioral expectations in conditioning control group. Higher cognitive processing is closely correlated to consumer's subsequent behavior when exposed to systematic pairing with stimuli and the brand in experiment group. On the other hand, in the conditioning control group, affective effort is an important factor in evaluating the animated ad and brand.

5.3 General Discussion

As discussed earlier, the motivation of the study was to examine the effects of animation and its relationship to human cognitive and affective processes by categorizing and using different type of animation featured in television commercials. This study assessed the impact of animation in commercials through a series of classical conditioning experiments.

People who have low product involvement are more likely to have a higher arousal to animated commercials as well as a more favorable attitude toward the animated commercial, and the advertised brand, and an increased purchase intention. However, people who are highly involved with the product develop a less favorable perception of animated commercials than live action based commercial. In addition, ad recall was ranked in clay animation commercial compared to other two different types of commercials in the first experiment. The results of multi-group CFA analysis revealed that there was no significant group difference on each path regarding values of modification indexes. The implication from this analysis is that the variation of cognition and affection through conation as purchase behavior is rarely different across three different commercial types when using animation as stimuli. This study suggests that animation in commercials plays an important role in consumer attitude formation as much as real human do when people are forming their attitude toward ad, brand and behavior. The advertising format might affect consumer perception of an intangible asset such as attitude toward the advertising and brand. Their purchase behaviors, however, are affected by other factors such as product quality, and prior experience.

This study described the relationship between animated commercials and human cognitive and affective processing through two different experiments. Given animated commercials can more effectively provide visual demonstrations and recall testimonies for products, this study confirmed that animated ads should take into account the influence of lower-level peripheral processing routes on viewer persuasion.

Through evidence from the classical conditioning experiment, it can be confirmed that the classical conditioning method would be more effective working under the

paradigm of low level personal relevance involvement toward the stimuli. This study demonstrated that awareness leads to favorable perception of the ad about target attributes and favorable brand attitudes. The experiment in this study re-established that awareness is enhanced by involvement. In addition, involvement influences attitude formation through classical conditioning procedures, with affect and belief formation acting as mediators.

This paper suggests that the animation in commercials can influence consumer perception of the brand and purchase behavior. It is argued that the positive emotions they generate become associated with the advertised product through classical conditioning. Animated commercials can aid viewers to stimulate or affect their emotional responses and behavioral expectations. The use of animation in movie and commercials is rapidly increasing in recent graphic interfaces because they motivate consumer actions and draw viewer attention to specific product features.

Consumers tend to view commercials passively, since the information provided induces less motivation to process (Hoyer and MacInnis 2001). The findings of this study increase the possibility of interpreting how animated commercials affect consumer attitudes via peripheral processing routes when using attractive or likable characters combined with motion, humor, and pleasant music in low product involvement categories (e.g., soft drinks, etc.). The results are associated with previous research on the classical conditioning mechanism. The study suggests that animation plays an important role in the classical conditioning mechanism in explaining the effectiveness of animated commercials as well as to interpret consumer-attitude formation.

The results of multi-group CFA analysis comparing conditioning and control group revealed that there was a significant group difference on each path regarding values of modification indexes. The implication from this analysis is that consumer intensified cognition and affection could have an influence on conation as purchase behavior when using animation as stimuli. The implication from the results is that the formed cognition from the advertised brand and intensified affect from specified components of commercials could drive the inclination of a possible action that consumers make take regarding the brand.

The subsequent purchase behavior would be driven from the intensified cognition and affection when consumer develop a strong and stable affection based on specific feature-based information from a reliable source and cognition generated from the analogical evaluation process when consumer are highly involved with the product (Park and Mittal 1985, p.222). In this study, the analysis of involvement groups, divided into high and low, implied that the model could be effectively working within the high product involvement group. Enhanced cognition and affection then leads to increase likelihood of purchase behavior.

This study suggests that the well-established animation used in commercials can increase positive affection and consumer attitudes toward both ad and brand. Animation in commercials is also closely related to advertising recall and a high arousal levels. This study confirmed that animation can motivate consumers toward action and increase consumer memory related to the ad and brand (e.g., recall). Image motion produced by clay could affect human cognitive processing and evoked some kinds of positive emotion such as arousal. Animation in ads can increase the subject's attention level. Clay

animation is a different animation style compared with the traditional hand drawn cartoons. Clay animation has been very popular in current entertainment industry as well as current television commercials due to its high-end graphics appeal and humor. Therefore, it is not surprising that using animation in commercials has increased since animation can exceed human imagination.

Imagery is used to retrieve information from memory in a variety of circumstances, but primarily when three conditions are met: 1) the information to be remembered has a subtle visual property; 2) the property has not been explicitly considered previously; and 3) the property cannot easily be deduced from other stored information (Kosslyn 1990, p.74). Also people used imagery to help produce descriptions, to help understand descriptions, as part of mental practice, and to induce emotional or motivational states (Kosslyn 1990, p.75). This discussion could be applied within this study in explaining the relationship between animated stimuli and consumer behavior. Thus, imagery stored in memory can drive subsequent behavior, and even help to recall specific objects (e.g., components of ad). Imagery stored in memory influence consumer cognitive processing and the evoked positive emotion. Kosslyn (1990) pointed out that mental imagery can act as a bridge to explore between perception and mental activity. As such, it is considered as the cognitive faculty “closest to the neurology” because so much is now known about the neural mechanisms of perception (p. 94). Kosslyn (1990) discussion is parallel with Paivio’s (1971) opinion who noted that memory can be improved if one visualizes the materials and then encodes the images into memory.

In sum, well-designed animation in commercials is associated with the influence of consumer cognitive and affective processing on viewer persuasion because animated

stimuli are based on the incorporating visualization and appropriate motion in commercials. Consequently, it can be implied that the better-designed animation could provide a better understating of how animation influences the relationship between consumer cognitive and affective processes and subsequent consumer behavior.

CHAPTER 6 CONTRIBUTION AND SUGGESTIONS

6.1 The Effect of Animation in Commercials

This study significantly contributes to our understanding of the relationship between animated commercials and human cognitive and affective processing. The other benefit of an animation study is the comparison between animated ads and live action formatted commercials by categorizing the types of animation. Thus, the results obtained elucidate the high level of consumer arousal and ad recall associated with animated commercials. The high level of arousal could be transformed into positive brand evaluation and attitude toward the ad and brand. This study exhibits merits by demonstrating what effective animated advertising stimuli is and by categorizing animated commercial types as a guideline for more animated advertisements.

Animation has become the new creative advertising trend in today's entertainment industry. As a character-based business, animation can expand the design of advertisement by applying digital content to different media, such as the Internet, mobile phone technology, and television. Animated commercials can more effectively provide visual demonstrations and recall testimonies for products. Furthermore, implications derived from this study illuminate how animated ads should take into account the influence of lower-level peripheral processing routes on viewer persuasion.

Understanding the relationship between animated commercials and how they stimulate viewers or effect their emotional responses and behavioral expectations provides valuable information to practitioners who design animated ads when they create

effective animated commercials. Animation has become an important design tool in recent graphic interfaces because they motivate consumer actions and draw viewers' attention to specific product features.

From a practical perspective, the findings provide advertiser and animation designers a useful information when they are creating a new animated characters in commercials. Understanding the relationship between exposure of animated commercials and viewers' perception of animated ads, brand and behavioral action crossings cognitive and affect responses is very valuable asset for advertising practitioners and scholars.

Animation designers believe that image motion should be generated from real world. Developed of quality human resources can be enhanced animation image motion as well as characters. The better-designed animation could provide a better understating of how animation influences the relationship between consumer cognitive and affective processes and subsequent consumer behavior.

Image motion produced by clay plays an important role in human cognitive processing and evoked some kinds of positive emotion such as arousal. The use the better-designed animation in ads can increase the subject's attention level. Clay animation is a different animation style compared with the traditional hand drawn cartoons. Clay animation has the potential benefits in current entertainment and advertising industries due to its high-end graphics appeal and humor. Therefore, it is not surprising that using animation in commercials has increased since animation can exceed human imagination.

6.2 The Effective Classical Conditioning Mechanism in Advertising Research

Classical conditioning suggests that positive attitudes towards an advertised product (CS) might develop through a product's association in a commercial with other positive stimuli (US). Through this study, the classical conditioning paradigm was shown to be a useful method and mechanism when using animated commercials as a new form of stimuli. This study shows how attitudes toward brands featured in animated ads are generated through classical conditioning procedures.

Furthermore, this study on classical conditioning is important in terms of discerning the role of awareness in classical conditioning by recognizing that effective conditioning can occur through direct affect transfer or through cognitive belief information. Contingency awareness could be a consequence of conditioning as well as the product of a deliberate cognitive process (Eagly & Chaiken 1993, p.410). This study demonstrated that awareness leads to a favorable perception of the ad about the target attribute and favorable brand attitudes. The experiments in this study re-examined the degree to which awareness of the CS/US contingency plays a role in classical conditioning.

Individuals who are highly involved with a stimulus exhibit a greater tendency to pay attention to the stimulus, have higher levels of attention to the stimulus in a conditioning experiment, and may gain contingency awareness. Individuals who are highly involved with the product are less likely to respond to animation as the unconditioned stimulus than to the information about the product. People who are highly involved with the product are more likely to develop favorable attitudes when exposed to

conditioning procedures in the absence of product information. Awareness is enhanced by involvement and involvement influences attitude formation through classical conditioning procedures with affect and belief formation acting as mediators.

Generally, classical conditioning is a prime method of persuasion. Many studies have demonstrated its effectiveness and its ubiquity in advertising research. This study confirmed that the classical conditioning would appropriate method to measure the effectiveness of a new product. Also, through evidence for classical conditioning experiment, this can provide an opportunity to better understand how classical conditioning could account for the potential impact of animated stimuli on product attitudes. The study asserts that a new brand paired with an affective conditioned stimuli (CS: target brand) could generate affective responses toward the CS.

Contingency awareness is a consequence of conditioning as well as the product of a deliberate cognitive process (Eagly and Chaiken 1993). The Implication from this study is that awareness of the CS/US contingency could drive more favorable attitudes toward the ad and target brand. Certain cues acting as affective stimuli could develop consumers' perception of the ad and attributions of the brand, thus enhancing message processing. Animation as affective stimuli helps subjects to pay attention to the stimulus and higher levels of attention to the stimuli in a conditioning experiment may result in awareness of the CS/US contingency.

The implication from the hierarchical communication model is that consumer intensified cognition and affection could have an influence on purchase behavior when using animation as stimuli in conditioning experiment. This study suggests that the formed cognition from the advertised brand and intensified affect from specified

components of commercials could drive the inclination of a possible action that consumers take regarding the brand. Also, this study suggests that better-designed animation in advertising would be an effective advertising design tool when explaining consumer attitude formation such as human cognition, affection and conation responses in a classical conditioning procedure.

6.3 Limitations and Suggestions for Future Research

This study did not cover familiarity and preference or fittingness. First of all, a consumer's familiarity with a product or brand influences such concepts as consumer adaptation, self-image, compliance, and identification. A similar topic must focus on the relationships among brand familiarity, consumer confidence in brand evaluations, consumer attitudes toward brands, and purchase intention. For brand preference issues, brand choice, and consumption, consumers create meaning and strengthen their identities through brand preference. Given the fit between the celebrity and the product as defined by the term "match-up hypothesis," different types of endorsers and celebrities affect consumer attitude. Future studies on animated commercials should include all of these issues.

There is also concern about the subjects, exclusively college students who might respond to animated commercials and react differently than people in other consumer segments. Therefore, it would be valuable to replicate the current study with a larger and more representative sample. Although this study was trying to optimize classical conditioning experiment by employing the basic principles of experimental design, classroom as well as video and audio issues were limited. Another concern is novelty effect in this study. Generally, people are likely to process stimuli when they are

surprising and they pay more attention to advertising and others that are novel or different as well as novel ads and stimuli attract consumer's attention. Thus, this study suggests that the novelty effect should be considered in the similar study when using novel ads and stimuli.

The product involvement manipulation used in this study asked participants about their interest in the target product, which may have highlighted the importance of the task, therefore creating more relevance in the part minds to normal interest levels. Study related involvement issues in advertising research emphasize that involvement contributes to cognitive attitude formation. This study suggests that advertisers should consider methods and advertising design tools to generate attention to their advertisement. Given that individual involvement is highly related with perception of advertising effectiveness (e.g., recall), advertisers also should consider the specific elements of a message and the components of advertisement to capture viewers.

In this study, issues involving animated commercial types are limited to two types of animated commercials, clay animation and cartoon commercials. Several animation types appear everywhere in the current entertainment industry.

Computer generated animation in the animation industry has become a significant increase due to the growing importance of new technologies. Furniss (2006) argued that computer animated special effects and techniques to enhance live-action images have become a dominant characteristic of contemporary motion pictures, especially in the action, sciences fiction, and television commercials (<http://encarta.msn.com>). Also the trend already is employed in a production of animation in commercials.

Although animation types could be classified in this study, the rate of computer generated animation is now increasing due to advancements in technology, which allows for easily designing and developing computer graphics. Future studies on animation in commercials should include more types of animation.

This study was focused on types of animation to compare animated commercials to live commercials in order to examine the relationship between affective stimuli and consumer attitude formation (e.g., cognitive, affective and conative) when viewing animated commercials. This study suggests that the further exploration of animation in advertising should research the relation between types of animated characters and consumers attitude formation (e.g., consumer's emotional response, cognitive processing and purchase behavior).

Given animation is regarded as affective stimuli; the degree of individual difference could affect consumer cognitive processing and emotional response to animated advertisements. Literature related to individual differences points out that specific individual characteristics, which including the reflections of an individual's inherent personality, background, consumer's knowledge, and abilities, influence how each consumer processes advertising messages. The results of the study indicate that the further exploration of animation should focus on such individual differences. Further study should consider that individually different variables play an influential role in determining how people respond to animated stimuli.

Consumer responses to animation in advertising were explained using classical conditioning mechanism in this study. Generally, animation acts as affective stimuli (US). Also animation may have the potential to generate positive belief and affection. This

study was conducted a classical conditioning experiment in low-involvement product category. Thus, this study suggests that the further exploration of the classical conditioning procedures should conduct under high-involvement product category. The further study of the classical conditioning should examine whether the classical conditioning will be occurred under high-product involvement categories (e.g., electronic products, etc.)

APPENDIX A
MULTI GROUP ANALYSIS EQS PROGRAM

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/LABELS
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V6=COG3; V7=COG4; V8=PI1; V9=PI2; V10=PI3;
F1= Affection; F2=Cognition; F3=Conation;
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V7 = *F2 + E7;
V8 = 1F3 + E8;
V9 = *F3 + E9;
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F2 = *F1 + D2;
F3 = *F1 + *F2 + D3;
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E1 = *;
E2 = *;
E3 = *;
E4 = *;
E5 = *;
E6 = *;
E7 = 1;
E8 = *;
E9 = *;
E10 = *;
D2 = *;
D3 = *;
/COVARIANCES
E1,E4=*; E4,E5=*; E7,E10=*; E7,E8=*;
E7,E9=*; E3,E9=*; E8,E9=*; E5,E10=*;
/PRINT
EIS;
FIT=ALL;
TABLE=EQUATION;
/END
/TITLE
```

```

Model built by EQS 6 for Windows
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METHOD=ML; ANALYSIS=COVARIANCE; MATRIX=RAW;
/LABELS
V1=SAMP; V2=SAMA; V3=SAMD; V4=COG1; V5=COG2;
V6=COG3; V7=COG4; V8=PI1; V9=PI2; V10=PI3;
F1=Affection; F2= Cognition; F3=Conation;
/EQUATIONS
V1 = *F1 + E1;
V2 = *F1 + E2;
V3 = *F1 + E3;
V4 = 1F2 + E4;
V5 = *F2 + E5;
V6 = *F2 + E6;
V7 = *F2 + E7;
V8 = 1F3 + E8;
V9 = *F3 + E9;
V10 = *F3 + E10;
F2 = *F1 + D2;
F3 = *F1 + *F2 + D3;
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E3 = *;
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E5 = *;
E6 = *;
E7 = *;
E8 = *;
E9 = *;
E10 = *;
D2 = *;
D3 = *;
/COVARIANCES
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/CONSTRAINTS
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(1,V7,F2)=(2,V7,F2);
(1,V9,F3)=(2,V9,F3);
(1,V10,F3)=(2,V10,F3);
(1,F2,F1)=(2,F2,F1);
(1,F3,F1)=(2,F3,F1);
(1,F3,F2)=(2,F3,F2);
/LMTEST
SET=PEE;
/PRINT
EIS;
FIT=ALL;
TABLE=EQUATION;
/END

```

APPENDIX B
QUESTIONNAIRE

Dear Participant

I am a doctoral student at the University of Florida. Under the supervision of Dr. Morris and Villegas, I am exploring the animated commercials for my dissertation. The information from you will not be released to anybody. Your identity will be kept confidential to the extent provided by law. You have the right to withdraw consent for participation at any time without consequence. There are no known risks or immediate benefits to the participants of this study. If you have any questions about this research protocol, please contact ChangHyun Jin at 846-1107

Description: You are invited to evaluate the animated commercials.

Procedures: First, you will be watched animated commercials. Next, you will be asked to evaluate the animated ads.

Whom to contact about your rights as a research participant in the study:
Chang-Hyun Jin, doctoral student, G038 Weimer Hall, College of Journalism and Mass Communications, Phone number: 352-846-1107, E-mail: chjin@jou.ufl.edu

UFIRB Office, Box 112250, University of Florida, Gainesville, FL 32611-2250, 392-0433

I have read and understand the above information. I agree to participate in the research. I have received a copy of this description.

Print Name of Participant

UF ID

Date

Gender: _____ Female

_____ Male

Instruction: Please read the following statement carefully and assume that it is your current situation. To successfully launch a new product named Juice the company will conduct a promotion at a grocery store. This company is trying to penetrate the Juice market. When buying this product, you would receive a book of coupons good for a year from a grocery store.

If you are interested in the statement, how much relevance does the product have to you?

Not at all : _____ : _____ : _____ : _____ : _____ : Very much
 -2 -1 0 +1 +2

If you chose the number zero (-2 and -1), please go to the third page.

If your answer is close to “Very much (0, +1 and +2)”, please read the statement on the right.

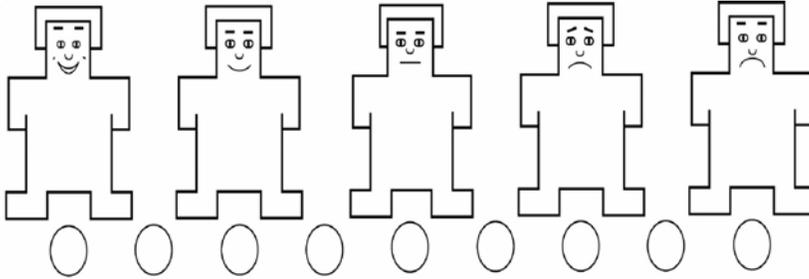
Dear Participant,

For participants highly involved with the Juice.

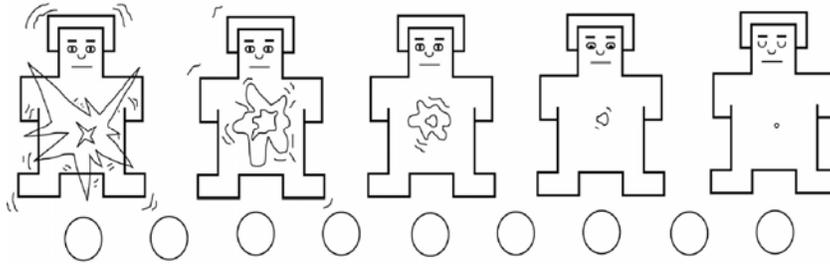
Please pay careful attention to the slide presentation. After watching the commercials related to the Juice, please carefully answer each question. Investigators will choose someone who makes the best response to the questions after collecting data. Then the investigators will pick the name from the group pool to win a prize.

Evaluation of the Product: It is your first impressions, the immediate feelings about the items that we want. On the other hand, please do not be careless, because we want your true impressions. How do you feel about the animated commercial after watching the commercial?

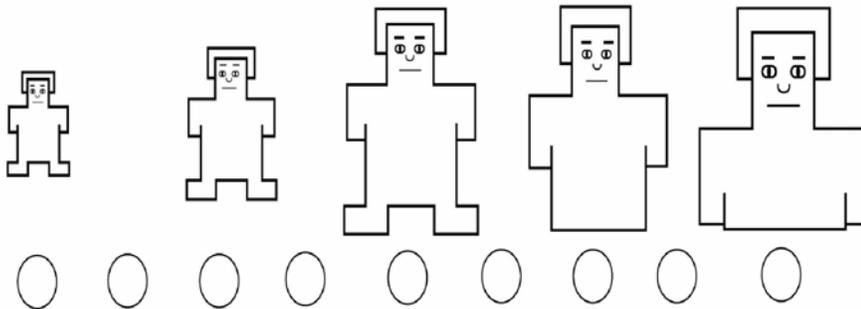
Q: Pleasure



Q: Arousal



Q: Dominance



Q: Product Involvement: Work at fairly high speed through this questionnaire. Do not worry or puzzle over individual items. It is your first impressions, the immediate feelings about the items that we want. On the other hand, please do not be careless, because we want your true impressions. Please place a checkmark to the number what thoughts and feelings went through your mind about the product after watching the commercial

Useless	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Useful	
		-3		-2		-1		0		+1		+2		+3			
Uninterested:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Interested
		-3		-2		-1		0		+1		+2		+3			
Worthless	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Valuable	
		-3		-2		-1		0		+1		+2		+3			
Unwanted	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Wanted	
		-3		-2		-1		0		+1		+2		+3			
Irrelevant	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Relevant	
		-3		-2		-1		0		+1		+2		+3			

Q1. Attribution of the brand

Please place a checkmark to the number that best represents your answer about how certain you are of each your responses after watching the commercial.

1-1). I believe that the product in the slide presentation could be of good quality.

Strongly	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Strongly
Disagree	-3		-2		-1		0		+1		+2		+3		Agree

1-2). I believe that the product in the slide presentation is reliable.

Strongly	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Strongly
Disagree	-3		-2		-1		0		+1		+2		+3		Agree

1-3). I believe that the product in the slide presentation could provide rich nutrients compared to other similar products.

Strongly	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Strongly
Disagree	-3		-2		-1		0		+1		+2		+3		Agree

1-4). I believe that the taste of the product in the slide presentation is good.

Strongly	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	_____	:	Strongly
Disagree	-3		-2		-1		0		+1		+2		+3		Agree

Q2: Consistency awareness: Depending on your experimental condition, there was a pattern to the scenes you saw in the Commercial. Please indicate your best guess about this pattern by circling the appropriate response

2-1). The name logo always came before playing scenes

Absolutely Uncertain: _____:_____:_____:_____:_____ : Absolutely Certain
1 2 3 4 5

2-2). Playing scenes was always shown with the picture of brand name logo at the same

Absolutely Uncertain: _____:_____:_____:_____:_____ : Absolutely Certain
1 2 3 4 5

2-3). Playing scenes always before the picture of the brand log

Absolutely Uncertain: _____:_____:_____:_____:_____ : Absolutely Certain
1 2 3 4 5

Q3: Evaluation of the Animated Commercial

How much the advertisement through the slide presentation affects you to remember it in future? Advertisement with animated character would be “---”

3-1). Unfavorable : _____:_____:_____:_____:_____:_____:_____ : Favorable
-3 -2 -1 0 +1 +2 +3

3-2). Unlikable : _____:_____:_____:_____:_____:_____:_____ : Likable
-3 -2 -1 0 +1 +2 +3

3-3). Bad : _____:_____:_____:_____:_____:_____:_____ : Good
-3 -2 -1 0 +1 +2 +3

3-4). Unpleasant : _____:_____:_____:_____:_____:_____:_____ : Pleasant
-3 -2 -1 0 +1 +2 +3

Q4: Evaluation of the advertised Brand

How much the advertised brand through the slide presentation affects you to remember it in future? I felt about the advertised brand in the slide presentation is “-----”

4-1). Unattractive : _____:_____:_____:_____:_____:_____:_____ : Attractive
-3 -2 -1 0 +1 +2 +3

4-2). Unlikable : _____:_____:_____:_____:_____:_____:_____ : Likable
-3 -2 -1 0 +1 +2 +3

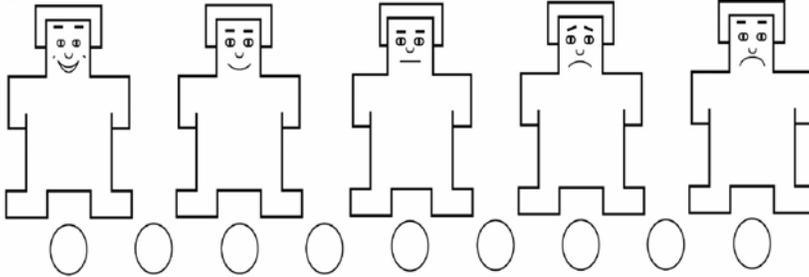
4-3). Bad : _____:_____:_____:_____:_____:_____:_____ : Good
-3 -2 -1 0 +1 +2 +3

4-4). Boring : _____:_____:_____:_____:_____:_____:_____ : Interesting
-3 -2 -1 0 +1 +2 +3

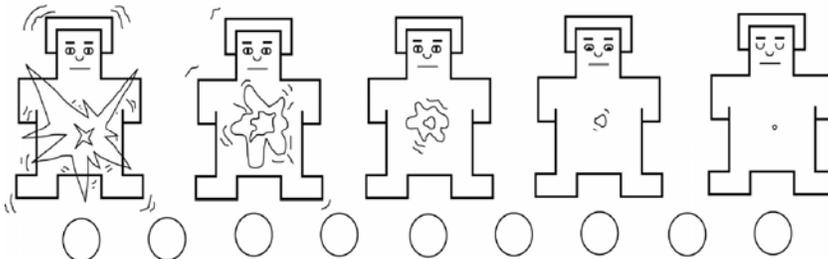
Evaluation of MP3 Player

It is your first impressions, the immediate feelings about the items that we want. On the other hand, please do not be careless, because we want your true impressions. How do you feel about the animated commercial after watching the MP3 Player commercial?

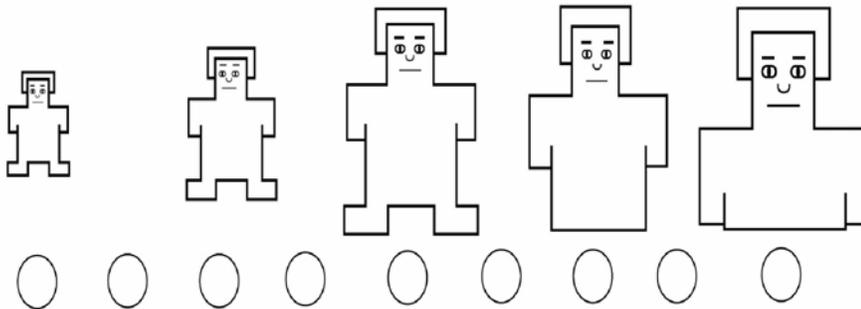
Q: Pleasure



Q: Arousal



Q: Dominance



Q7: Consistency awareness

Depending on your experimental condition, there was a pattern to the scenes you saw in the Commercial. Please indicate your best guess about this pattern by circling the appropriate response

7-1) MP3 player product name was always shown before playing scenes

Absolutely Uncertain: _____:_____:_____:_____:_____ : Absolutely Certain
1 2 3 4 5

7-2) Playing scenes always came before the MP3 Player (Yepp) brand name.

Absolutely Uncertain: _____:_____:_____:_____:_____ : Absolutely Certain
1 2 3 4 5

7-3) The brand name logo was always shown with playing scenes at the same

Absolutely Uncertain: _____:_____:_____:_____:_____ : Absolutely Certain
1 2 3 4 5

Q8: Evaluation of the MP3 Player Animated Commercials

How much the advertisement through the slide presentation affects you to remember it in future? Advertisement with animated character would be “---”

8-1). Unfavorable :_____:_____:_____:_____:_____:_____:_____ : Favorable
-3 -2 -1 0 +1 +2 +3

8-2). Unlikable :_____:_____:_____:_____:_____:_____:_____ : Likable
-3 -2 -1 0 +1 +2 +3

8-3). Bad :_____:_____:_____:_____:_____:_____:_____ : Good
-3 -2 -1 0 +1 +2 +3

8-4). Unpleasant :_____:_____:_____:_____:_____:_____:_____ : Pleasant
-3 -2 -1 0 +1 +2 +3

Q9: Evaluation of the advertised Brand

How much the advertised brand through the slide presentation affects you to remember it in future? I felt about the advertised brand in the slide presentation is “-----”

9-1). Unattractive :_____:_____:_____:_____:_____:_____:_____ : Attractive
-3 -2 -1 0 +1 +2 +3

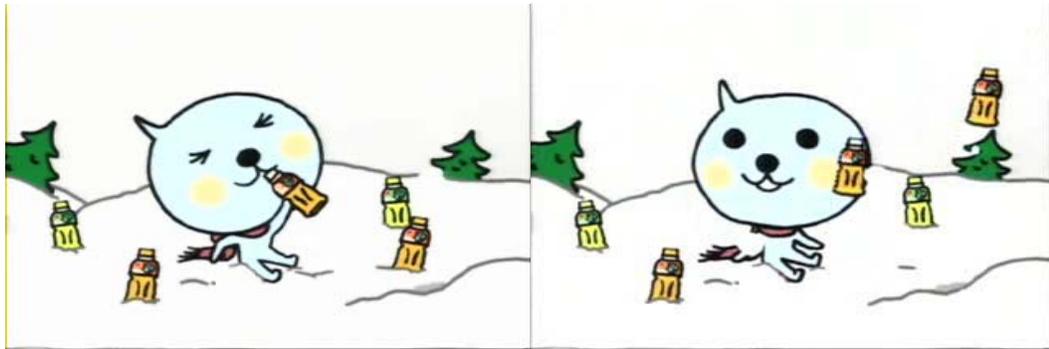
9-2). Unlikable :_____:_____:_____:_____:_____:_____:_____ : Likable
-3 -2 -1 0 +1 +2 +3

9-3). Bad :_____:_____:_____:_____:_____:_____:_____ : Good
-3 -2 -1 0 +1 +2 +3

9-4). Boring :_____:_____:_____:_____:_____:_____:_____ : Interesting
-3 -2 -1 0 +1 +2 +3

APPENDIX C
ANIMATION STIMULI

Sample_1



Sample_2



Sample_3



Sample_4



Sample_5



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BIOGRAPHICAL SKETCH

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