

An Investigation of the Influences of Consumer Involvement on Message Repetition Effects

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I. Introduction

One of the issues in message repetition effects in the research of consumer psychology and advertising has been whether there exists wearout effect when message recipients are exposed to a commercial several times. When there exists the wearout effect, this phenomenon is called inverted-U relationship between message repetition and message acceptance. The inverted-U relationship has theoretically been proposed and supported by several studies. However, there have also been some studies which do not support this proposition.

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Regarding the different effects of varied commercials are more effective than the simple repetition of one commercial.

After involvement theory was first introduced into advertising research and consumer behavior research in the mid-1960's, it has grown to be a major construct in helping to understand consumer behavior. The objective of this research is to investigate how involvement level moderates the message acceptance (brand attitude formation) and spontaneous responses across different levels of message repetitions.

Two research issues are raised in relation to the objective of this research. The first issue is related to consumers' brand attitude formation. In relation to different types of goods or commercials, Rat, Sawyer, and Strong (1971) reported that repetition continued to increase purchase intention in the case of low-price "convenience" goods ads or "non-grabber" ads, but not in the case of high-price "shopping" goods ads. More recently, Batra and Ray (1986) has found that repetition leads to relatively more gains in brand attitudes and purchase intentions when the ads were evoking a low number of cognitive responses compared with when the ads were evoking a high number of cognitive responses. Here, one may infer that low-price convenience goods and non-grabber ads are likely to bring on a lower level of involvement, compared with high-price shopping goods and grabber ads. It is also expected that low involvement consumers would have less cognitive responses than high involvement consumers. Based on this reasoning, the first issue is raised as follows.

Issue I. Will consumer involvement moderate brand attitude formation for differing numbers of ad repetitions?

The next issue concerns consumers' spontaneous responses. There have been several findings that cognitive responses mediate brand attitudes (Belch 1982, Olson, Toy, and Dover 1978, Toy 1982, Wright 1973). In addition, Cacioppo and Petty (1979, experiment 1 of 1980) and Calder and Sternthal (1980-product B) found that the pattern of cognitive responses was quite consistent with that of attitude change over different levels of repetition. However, there

also exists some research reporting that brand attitudes and cognitive responses were not perfectly parallel over different levels of repetition (e.g., Belch 1982, experiment 2 of Cacioppo and Petty 1980, Calder and Sternthal 1980-product A). While many researchers have found a mediating effect of cognitive responses on brand attitudes, Batra and Ray (1985) found that affective responses have strong mediating influences on brand attitudes. There is growing evidence that attitude toward the brand can be influenced not only by brand beliefs, but also by attitude toward the ad supporting the brand (Lutz, Mackenzie, and Belch 1983; Mackenzie, Lutz, and Belch 1986; Mitchell and Olson 1981). It has also been found that this phenomenon tends to appear more clearly in the case of low involvement than in the case of high cognitive involvement (Park and Young 1983, 1986). Gardner (1985) reports that brand beliefs are more significant mediators of brand attitudes under a brand set condition than under a nonbrand set condition.

In this case, it is expected that affective responses influence brand attitudes through ad attitudes while cognitive responses influence brand attitudes through brand cognitions (brand beliefs). If the relative strength of influence of brand cognition versus ad attitudes on brand attitudes varies with message recipients' involvement level, it may be true that the relative strength of influence of cognitive responses versus affective responses on brand attitudes varies with message recipients' involvement level. Therefore, it would appear that the pattern of change in the cognitive responses over repetition levels does not parallel the pattern of attitude change if consumers affectively processed the stimulus. If so, it is reasonable and desirable to consider all types of "spontaneous responses" including cognitive responses and affective responses for study of this area. Based on this reasoning, the second issue is raised as follows.

Issue II. Can the directional change in brand attitudes over different levels of repetition be better explained if the mediating role of whole "spontaneous responses" in brand attitudes formation is investigated instead

of the mediating role of only cognitive responses?

II. Literature Review and Hypotheses Establishment

This chapter reviews literature which is related to the above issues. Then, the research hypotheses of this paper are established on the basis of the literature review.

1. Effects of Message Repetition on Message Acceptance

One of the research areas in relation to advertising and message acceptance is the effects of message repetition on cognition, attitude, and behavioral intention. It is generally expected that message recipients are more likely to be persuaded by the persuasive message when they are exposed to the message multiple times than a single time. Classical conditioning effects can be employed to explain this phenomenon. Presenting a commercial once might not be enough for the conditioned stimulus to elicit a conditioned response. Instead, presenting a commercial containing a conditioned stimulus (e.g. a soft drink) and an unconditioned stimulus (e.g. jingle) several times would lead to a conditioned response (a change in preference). In short, repetition is considered a means for strengthening conditioning effects (McSweeney and Bierley 1984).

On the other hand, there have been several studies which found that message acceptance increases to a certain level of exposure, then decreases. This phenomenon is called inverted-U relationship between "exposure frequency" and "the formation of favorable attitude and behavioral intention." Berlyne's (1970) two factor theory has often been cited as a theoretical explanation for this curvilinear relationship. That is, (a) a positive habituation effect (i.e., a reduction in uncertainty or conflict) would dominate at the moderate levels of repetition, and (b) a tedium effect would dominate at the high levels of repetition. Another theoretical explanation of this relationship was made in terms of active information processing (Calder and Sternthal 1980). According to this view, message recipients rehearse two kinds of thoughts during

exposures to a message: "message-related thoughts" and "own thoughts." The information processing theory postulates that with the initial exposures to a message, thoughts tend to be message-related, resulting in more favorable attitude formation; however, at high levels of repetition, the own thoughts would dominate, resulting in less favorable attitude toward the product. This section reviews the important literature related to the issues of message repetition effects.

Ray, Sawyer, and Strong (1971) report several findings of laboratory and field studies. In one laboratory study of repetition effects, they found that repetition effects vary from convenience goods to shopping goods. For the convenience goods, repetition produced strong positive effects for both advertising recall and purchase intention. For shopping goods, repetition effect was leveled at five and six exposures for advertising recall and was insignificant for purchase intention. They also report that repetition increased purchase intention for nongrabber ads, but did not increase purchase intention for grabber ads. Here, grabber ads were defined as "different enough in format to attract attention and accomplish the bulk of the potential communication in a single exposure" (p.18). In short, it was found that repetition effects vary with different types of ads or goods advertised.

Mitchell and Olson (1977) attempted to take an attitudinal, information processing approach that focuses on the intervening cognitive factors mediating changes in attitudes and behavioral intentions. In the experiment, subjects were asked to watch the same ads several times and evaluate them. In this study, they did not find the significant repetition effects on recipients' beliefs and brand attitudes. The authors wrote that the result was entirely consistent with Krugman's (1972) notion that the content of most ads is acquired in one or two trials. This explanation is very plausible, since subjects are expected to process information in one or two exposures in the case of high ad involvement. In addition, this finding is similar to Ray, Sawyer, and Strong's (1971) finding for the repetition effects of grabber ads. However, the reason for the present

lack of repetition effects might be the extremely simple information contained in the ads.

As discussed before, Berlyne's (1970) two factor theory has often been the basis for predicting repetition effects on persuasion. Stang (1975) extended Berlyne's positive habituation effect by proposing that learning about the stimulus by repetition would lead to an increase in liking. Based on these propositions, Cacioppo and Petty (1979) studied focusing on the relationship among attitudinal, association, and learning (cognitive) effects of message repetition. They hypothesized in this study that attitude change with repetition would follow an inverted-U relationship, and it would parallel the cognitive response. Two experiments were conducted to test these hypotheses. Major findings were: 1) agreement (favorable attitude formation) first increased, then decreased as exposure frequency increased; 2) favorable thoughts increased, then decreased, whereas counterarguments decreased, then increased. This pattern of cognitive response was pretty consistent with that of agreement; 3) learning (measured by recall) increased with repetition, but liking (agreement) was unrelated to learning. In short, their findings supported Berlyne's (1970) two factor theory, but did not support Stang's (1975) proposition.

Cacioppo and Petty (1980) report another study of repetition effects, in which two experiments were conducted. In the first experiment, they found, the results of the first experiment were quite similar to their previous findings (1979), thus supporting Berlyne's two-factor theory. In the second experiment, they found that as exposure frequency increases, a strong message become more persuasive; a weak message become less persuasive; and a novel (but weak) message become more, then less, persuasive with repetition. But attitudes and cognitive responses were not perfectly parallel.

Calder and Sternthal (1980) suspected, following information processing prediction, that wearout can occur even when advertisers attempt to enhance attention by spacing exposures over time, by using multiple executions of the message, or by dominating the media environment. In summary, the results

of their study supported their hypotheses. However, the study failed to show that the cognitive response pattern necessarily corresponds with evaluations. Specifically, the pattern of cognitive responses was quite consistent with the pattern of attitude change in the case of one product, but not in the case of the other product.

While most other research was conducted with adult subjects, the purpose of Gorn and Goldberg's (1980) study was to assess whether child viewers respond like adults to varying degrees of repetition and to repetitive or varied sets of commercials for the same products. It was found in this study that varied-commercial was more effective than repetition of identical commercial in attitude formation; and an inverted-U relationship existed between exposure frequency and attitude.

Belch (1982) investigated the effects of television commercial repetition on cognitive response and message acceptance (measured by attitudes and purchase intentions) on the bases of Berlyne's (1970) two-factor theory and Cacioppo and Petty's (1979) two-stage attitude modification models. It was reported, however, that the message acceptance measure (attitude and purchase intention) did not show the positive-then-negative effects of repetition. The cognitive response results also failed to support the inverted-U relationship. In summary, his finding did not follow Berlyne's (1970) two factor theory nor was consistent with Cacioppo and Petty's (1979) finding.

Recent studies have introduced the role of involvement or involvement-like construct in the study of ad repetition. Schumann (1983) has conducted a study to assess how consumer involvement as well as variation of commercial moderates the repetition effects. The experimental results provide some support for the view that tedium can be forestalled by varying execution of ads, particularly under low involvement conditions. Under high involvement, it was found, tedium can not be forestalled by varying execution of ads, since subjects are motivated to process the message at relatively low repetition levels. This finding is consistent to some degree with Batra and Ray's (1986) finding.

Very recently, Batra and Ray (1986) have studied how situational variables such as motivation, ability, and opportunity to respond moderate the advertising effects. It had been found in the previous research that high levels of motivation, knowledge, and response opportunity would evoke high level of cognitive responses at low levels of repetition. In this case, more exposures were not effective in gaining message acceptance. Hence, Batra and Ray (1986) hypothesized that if the ads were evoking a low number of brand claim thoughts (cognitive responses), repetition would lead to gains in purchase intentions and attitudes (hypothesis 1). In a similar way, it was hypothesized that repetition would lead to gains if the antecedent motivation/ability (H2) or opportunity (H3) is low. In contrast, if either the ads were evoking many thoughts or those antecedents were at high levels, no repetition effects were expected. It was found from the experimental results that H1 and H2 were supported, but H3 was not supported (but direction appeared as expected). The authors suspected that H3 was not supported because of a less-strong manipulation or "affect-rational" confounding. This type of attempt to defend the original hypothesis is not desirable. Rather, the authors could doubt their own hypothesis or previous findings on which they based their hypothesis.

2. Effects of Attitude Toward Ad on Attitude Toward Brand

It was generally accepted that attitude toward an object would be influenced by only cognition toward the object. Both the cognitive structure model (Ajzen and Fishbein 1973, Fishbein 1963, Lutz 1977) and the cognitive response model (Greenwald 1968, Wright 1973) have been developed on this premise. The effects of advertising were also studied following this cognition-based information processing paradigm. A challenging perspective against this relationship between cognition and attitude was made by Zajonc in psychology. Zajonc (1980) and Zajonc and Markus (1982) have argued that affect (feeling) may arise even before cognition (thinking). Preference would involve cognitive and affective components. According to the traditional view, the affective component must be preceded by cognitive component. Zajonc and his colleagues

have argued that under some circumstances, affective responses may be fairly independent of cognition.

Another alternative proposition to explain attitude formation without being based on beliefs about the object is the classical conditioning approach to attitude formation (Staats and Staats 1967). This approach posits that attitude toward an object (the conditioned stimulus) may be formed in a favorable way or unfavorable way by pairing the object with a positively or negatively evaluated stimulus (the unconditioned stimulus). This idea is related to the affect-referral as a choice heuristic in the consumer behavior context. When consumers have no favorable or unfavorable attitude about a brand, if the brand is advertised on TV in a very favorable ad environment (such as a beautiful scenery, an attractive smile, pleasant music, etc.), the consumers may have a favorable attitude toward the brand without forming beliefs about the brand. The attitude toward the brand seems to be related to affective reactions to the executional elements of the advertisement.

Hence, more recently, information processing researchers in consumer behavior research have begun to consider the new construct "attitude toward advertisement" as a supplementary factor for brand beliefs to understand, explain, and predict attitudes toward brand, especially when they study the advertising effect on brand attitude formation and change. This section reviews the most important studies in this area.

One of the first studies in this area belongs to Mitchell and Olson (1981). Their proposition begins with questioning Fishbein's attitude theory that beliefs are the only mediator of attitude formation and change. If Fishbein's theory is correct, removing the effects of message on beliefs also would remove the significant message effect on attitude. They found from an experiment that attitude toward the object (A_o) and attitude toward the act (A_{act}) can be explained by both belief structure ($b_i e_i$) and attitude toward the ad (A_{ad}) much better than by belief structure alone. In this case, the explanatory power of A_{ad} was greater than that of belief structure. They concluded that contrary to

Fishbein's attitude theory, the product attribute beliefs are not the sole mediator of attitude formation. Rather, it was concluded, attitude toward the advertisement also mediates advertising effects on brand attitude. Mitchell and Olson's (1981) finding was well supported by MacKenzie and Lutz (1983) and MacKenzie, Lutz, and Belch (1986)'s studies, which considered possible causal relationships among A_{ad} , brand cognitions (C_b), attitude toward the brand (A_b), and purchase intention.

Some other researchers included involvement or involvement-related constructs in the study of this area. Lutz, MacKenzie, and Belch (1983) proposed that recipients level of motivation in relation to the communication and ability to process the information would relatively determine processing type between central and peripheral processing (a strong C_b - A_b relationship or a strong A_{ad} - A_b relationship). The findings only partly support the hypotheses. First, A_{ad} appeared to be a significant mediator of A_b in both high knowledge/high importance group and low knowledge/low importance group. As hypothesized in H1, A_{ad} appeared to dominate C_b in influencing A_b in the Low/Low group. However, contrary to H2 A_{ad} was also a stronger influence than C_b in the High/High group. Borrowing Petty and Cacioppo's (1981) expression, instead of a switch from peripheral to central processing in the High/High group, central processing emerged as a supplement to the still-dominant peripheral processing mode. However, supporting the unexpected finding, it was suspected that A_{ad} may be the relatively influential mediating variable, in reality.

Park and Young (1983, 1986) studied moderating roles of involvement in studying the effect of advertising. They divided involvement into three cases; cognitive involvement, affective involvement, and low involvement. Their major findings were: 1) Cognitive involvement condition leads to stronger effect of C_b (than A_{ad}) on A_b , and 2) affective involvement and low involvement conditions lead to stronger effect of A_{ad} (than C_b) on A_b .

Gardner (1985) proposed that the degree of mediation of A_{ad} and C_b may depend on two different processing "sets"—brand evaluation and nonbrand

evaluation. It was reported that A_b formed under a nonbrand set appeared to be influenced by both A_{ad} and C_b . The observed effect of A_{ad} was consistent with the results of studies which used nonbrand sets to examine A_{ad} (e.g., Lutz, Mackenzie, and Belch 1983; Mackenzie and Lutz 1983; Mitchell and Olson 1981; Moore and Hutchinson 1983; Park and Young 1983-low involvement condition). The findings also suggest that A_b formed under a brand set is based on both C_b and A_{ad} . The greater impact of C_b under a brand set than under a nonbrand set is consistent with findings of prior studies (e.g., Gorn 1982; Park and Young 1983-cognitive involvement condition; Petty, Cacioppo, and Schumann 1983). The observed effects of A_{ad} are most directly comparable with those reported by Lutz, Mackenzie, and Belch (1983).

Based on Petty, Cacioppo, and Schumann (1983)'s proposition for two different routes of attitude change, i.e. central route and peripheral route, Batra and Ray (1985) proposed that the central source would lead to cognitive responses, and the peripheral source would lead to affective responses toward the advertisement. They postulated that brand attitudes consist of two different components; attribute-based utilitarian attitude component (utilitarian affect) and ad execution-based hedonic component (hedonic affect.) Based on this postulation it was hypothesized that the utilitarian affect would be resulted from cognitive responses, and the hedonic affect should be created by classical conditioning of affect from ad executions, from ad frequency, etc., and would mostly be resulted from affective responses. In relation to involvement, they proposed that the ad execution-based hedonic component should be the major contributor to purchase intentions of consumers in the low involvement situations. In the high involvement situations, on the other hand, the major contributor to purchase intentions would be the attribute-based utilitarian attitude component. Their major findings were:

- 1) The affective responses represent strong mediating influences on brand attitudes.
- 2) In the high involvement case, while the ad execution sensitive attitudinal component has a non-significant relationship with purchase intentions, the attribute sensitive

component has a significant relationship. In the low involvement case, the relationships are reversed (but are not so significant as in high involvement.)

3. Establishment of Hypotheses

The first research issue was whether consumer involvement moderates the formation of brand attitudes for differing numbers of ad repetitions. As reviewed, it was found that the effect of message repetition on message acceptance (formation of attitudes or purchase intentions) was higher in the case of low-price consumer goods ads or non-grabber ads than the case of high-price shopping goods ads or grabber ads (Ray, Sawyer, and Strong 1971). The reason for this difference in repetition effect may be found in that low-price consumer goods ads and non-grabber ads would attract relatively less initial attention than the other cases. When consumers' attention level is low, the ad repetition would be more effective for favorable brand attitudes formation than when consumers' attention level is high. It is because consumers would not process all of the information at the low levels of repetition if their attention level is low, while consumers would process information at the low levels of repetition and feel tedious at the higher levels of repetition if their attention level is high.

It was also reported that repetition effect was higher in the case of ads evoking less cognitive responses than more cognitive responses (Batra and Ray 1986). It is believed that low involvement consumers would give less attention to the message and have less cognitive responses on the message than high involvement consumers. Therefore, in Hypotheses Set I, it is hypothesized that involvement level moderates the attitudinal effects of repetition.

Hypotheses Set I

- H I-1: Magnitude of repetition effect on brand attitudes is greater for low involvement consumers than for high involvement consumers.
- H I-2: Wearout effect of repetition appears at a lower level of repetition for high involvement consumers than for low involvement consumers.

The next issue was whether the directional change in brand attitudes over

different levels of repetitions can be better explained with comprehensive spontaneous responses. Regarding the moderating role of involvement in information processing routes, it has been theoretically proposed and partially supported that low involvement situations lead to a strong influence of ad attitudes on brand attitudes and high involvement situations lead to a strong influence of brand cognitions on brand attitudes (e.g., Gardner 1985, cognitive and low involvement cases in Park and Young 1983, 1986, Petty, Cacioppo, and Schumann 1983).

Consumers' spontaneous responses may be classified into brand-related responses and ad-related responses as well as cognitive responses and affective responses. Therefore, it may be reasonable to say that ad attitudes are more likely to be mediated by ad-related responses, while brand cognitions are more likely to be mediated by brand-related responses. Therefore, it is expected that ad-related responses mediate brand attitudes through ad attitudes (ad-related responses-ad attitudes-brand attitudes), whereas brand-related responses mediate brand attitudes through brand cognitions (brand-related responses-brand cognitions-brand attitudes). Previous findings and theoretical reasoning lead to the second set of hypotheses.

Hypotheses Set II

- H II-1: For high involvement consumers, the directional change in brand attitudes is consistent with the directional change in brand-related responses across different levels of repetition.
- H II-2: For low involvement consumers, the directional change in brand attitudes is consistent with the directional change in ad-related responses across different levels of repetition.

III. METHODOLOGY

1. Pretest of Involvement Manipulation

Since Krugman (1965) introduced the involvement construct into advertising and consumer behavior research, a lot of definitions of involvement have been

established. Among others, Mitchell (1979) conceptualized involvement as a state variable and defined it as "the amount of arousal, interest or drive evoked by a stimulus or situation (p.194)." Houston and Rothschild (1978) proposed three kinds of involvement. Among them, the situational involvement was conceptualized as "the ability of a situation to elicit from individuals concern for their behavior in the given situation (p.184)." According to this conceptualization, individuals' involvement for a product or a commercial would vary with the given situations. Following the conceptualizations of Mitchell (1979) and Houston and Rothschild (1978), the involvement construct is conceptualized as a state and situation-specific variable in this paper.

In the present study, the author manipulated the subjects' involvement level into high or low level as other researchers did in previous studies (e.g., Petty, Cacioppo, and Schumann 1983, Park and Young 1986, Wright 1973). Manipulation of involvement levels was pretested. One hundred forty-two subjects were randomly divided into two groups. Seventy two subjects were given the high involvement scenario, while seventy subjects were given the low involvement scenario as follows.

Scenario Descriptions

High involvement group:

"Assume the following situation. You are expected to graduate from college at the end of this term and you have found a good job. Even if you have a car now, it is too old and very often breaks down. So, you are seriously considering purchasing a new car. Since you are tired of used cars, which you have always owned, this time you want to buy a brand new car. Because of your budget limitations, you are considering a subcompact car, but you have not yet determined the brand."

Low involvement group:

"Assume the following situation. You are a junior student at MSU with more than one year left before graduation. You have a car now, and it works pretty well. Besides, you cannot afford a new one quite yet."

Subjects were then asked to assume to watch a TV program in which the commercial of a new subcompact car was embedded. Next, they were asked to answer to the question, "Which part of the TV communication did you

concentrate on, most?" using 5 point scale (1. TV program-5. commercial). As expected, mean score of subjects in the high involvement group was significantly higher than that of subjects in the low involvement group (3.04 for High and 2.40 for Low, $p\text{-value} < .01$). In conclusion, it appeared that the manipulation for involvement level worked well.

2. Experimental Design

Design and Stimulus

As commented before, the involvement level was manipulated into high and low levels. For ad repetition levels, three different repetition levels were considered: one, three, and five times. Therefore, a 2×3 between-subjects factorial design was used.

As the stimulus, a 30-second television advertisement of Excel brand (Hyundai passenger car) was chosen. Because the advertisement had not been aired in the Midwest by the time of experiment, it was likely that subjects had not previously been exposed to the advertisement. Subjects all attended the same large Midwestern university. The experimental advertisement was professionally embedded in a television program titled as "Animals in Action". Three different video cassette tapes (each for 1, 3 or 5 repetitions of advertisement) were edited.

Subjects

Three hundred forty six undergraduate students participated in the experiment. The number of participants for each experimental condition is some greater than fifty. For the final analysis, the cell sizes were reduced to fifty by eliminating incomplete or incorrectly completed questionnaires first. Secondly, questionnaires were eliminated from subjects who tended to score poorly on confirmatory questions regarding the involvement manipulation.

Experimental Procedure

Two types of questionnaires were used for the experiment: type "H" for high involvement subjects and type "L" for low involvement subjects. The questionnaires were different in only the scenario description (see Scenario

Descriptions described before). The questionnaires of type "H" and type "L" were alternately stacked into one pile and subsequently handed out to all students. Thus, students seated side by side completed different forms.

Subjects were asked to read and fill out pages 1 to 3 before they were exposed to the TV program including the commercial(s). In these pages, they were asked to read their involvement scenario. In addition, they were asked to describe on paper in a few sentences the role they were supposed to play. This helped reinforce the role they were asked to play. In this way, subjects were expected to have a high or a low level of involvement with the situation of subcompact car purchase before they were exposed to the subcompact car commercial(s). Then, the subjects were asked to watch the TV program in which the experimental commercial(s) was (were) embedded. Each subject was exposed to the commercial one, three, or five times. After they finished watching the TV program, they were asked to answer the rest of the questionnaire. When they finished, the subjects were debriefed and thanked for participating in the experiment. Each subject was also given their choice of a candy bar or a pack of orange juice for participating in the experiment.

3. Measurement of Dependent Variables

Manipulation Check

After the subjects were exposed to the commercial(s), they were asked a question, "Which part of the TV communication did you concentrate on most, while you were watching the TV?" Then, they answered their relative attention level between TV show and the commercial(s) by marking on three 5-point bipolar scales (most on the TV show most on the commercial, most on messages about the animals—most on messages about the automobile, and most on learning about animal moving—most on characteristics of the automobile).

Spontaneous Responses

After being exposed to the experimental commercial(s), the subjects were asked to write down any and all thoughts and/or feelings they had while they

were watching the commercial(s). Three judges coded the spontaneous responses into five categories based on the pre-established criteria: positive brand-related responses, negative brand-related responses, positive ad-related responses, negative ad-related responses, and other responses. Each type of responses included cognitive responses and affective responses (e.g., positive brand-related responses include positive brand-related cognitive responses and positive brand-related affective responses). Table 1 shows the criteria used to code the spontaneous responses in different categories.

Table 1. Coding Criteria of Spontaneous Responses

Positive brand-related responses:
Positive statements on brand evaluation (e.g., a nice looking car)
Positive statements on brand affect (e.g., maybe this is the car I wanted)
Negative brand-related responses:
Negative statements on brand evaluation (e.g., looks like the engine is not very strong)
Negative statements on brand affect (e.g., I didn't like the style of the car)
Positive ad-related responses:
Positive statements on ad evaluation (e.g., I think the ad is effective)
Positive statements on ad affect (e.g., the setting for the ad was pleasant)
Negative ad-related responses:
Negative statements on ad evaluation (e.g., the ad design was poor)
Negative statements on ad affect (e.g., I felt bored by too many repetitions)
Other responses:
Neutral statements (e.g., small luxurious car)
Curiosity statements (e.g., I want to know the price)
Unrelated statements (e.g., the show was interesting)

In the coding results, unanimous agreement among three judges were obtained on 87.0 percent of the coded responses. The responses on which an unanimous agreement was not initially made were adopted or discarded depending on agreement after discussion. Finally, 97.3 percent of responses were categorized with agreement. Each subject's brand-related response score was obtained by subtracting the number of negative brand-related responses from the number of positive brand-related responses. Similarly, each subject's ad-related response score was obtained by subtracting the number of negative ad-related responses

from the number of positive ad-related responses.

Attitude Toward the Ad

Following Mitchell and Olson (1981) and Gardner (1985), attitude toward the ad (A_{ad}) was measured by computing the mean of scores obtained from four seven-point (1~7) evaluative scales (very bad-very good, dislike very much-like very much, very irritating-not irritating at all, not interesting-very interesting).

Attitude Toward the Brand

Following Fishbein, attitude toward the brand was measured by attitude toward the Hyundai Excel itself (A_0), and attitude toward the act of purchasing Hyundai Excel (A_{act}). To measure A_0 and A_{act} , the scales used by Mitchell and Olson (1981) were employed. The mean of four sevenpoint evaluative scales (very bad-very good, dislike very much-like very much, very poor quality-very high quality, and unpleasant-very pleasant) was used as a measure of attitude toward the brand itself (A_0) for each respondent. The mean of three seven-point evaluative scales (very bad-very good, very foolish-very wise, very harmful-very beneficial) was used as a measure of attitude toward the act of purchasing and using brand (A_{act}) for each respondent.

IV. RESULTS

1. Reliability Check

Before analyzing the collected data, coefficient alphas were computed to check the reliability of constructs measured with multi-item scales. The coefficient alphas_r for the measures of each construct are shown in Table 2.

Table 2. Coefficient Alphas of Scales

Scale	Coefficient Alpha
Manipulation check	.8760
Attitude toward the ad (A_{ad})	.8089
Attitude toward the object (A_0)	.8895
Attitude toward the purchase (A_{act})	.9258

2. Manipulation Check

The mean and standard deviation for subjects in each of the high and low groups were computed with each individual subject's mean score obtained from three items for manipulation check. Using a t-test, it was found that subjects in the high involvement group gave relatively more attention to the advertisement than subjects in the low involvement group (3.00vs. 2.38, $p < .001$). This was the expected result based on the theoretical reasoning. In summary, it appeared that manipulation of situational involvement levels succeeded.

3. Tests of Hypotheses

Hypotheses Set I

To test the Hypotheses Set I, the data were analyzed with Analysis of Variance. First, the effects of ad repetition on brand attitudes measured by A_0 score were analyzed. Table 3 shows the mean A_0 scores of low and high involvement subjects for different levels of repetitions. It was found that as repetition level increased, the mean A_0 scores of low involvement subjects increased ($F=6.04$, $p < .01$, see Figure 1), but the mean A_0 scores of high involvement subjects decreased ($F=3.15$, $p < .05$, see Figure 1).

Tukey's studentized range (HSD) test was applied to check the significance

Table 3. Mean A_0 and A_{act} Score by Exposure Level

	Single exposure		Three exposure		Five exposure	
	A_0	A_{act}	A_0	A_{act}	A_0	A_{act}
Low	4.46	4.16	4.50	4.24	4.99	4.78
High	4.66	4.51	4.39	4.16	4.23	4.04

Table 4. Interaction between Rep. and Inv. (Dep. = A_0)

Source	d.f.	SS	MS	F	PR > F
Repetition	2	1.43	.71	.97	.378
Involvement	1	3.74	3.74	5.09	.024
Rep × Inv	2	12.00	6.00	8.16	.000
Error	294	216.13	.73		
Total	299	233.30			

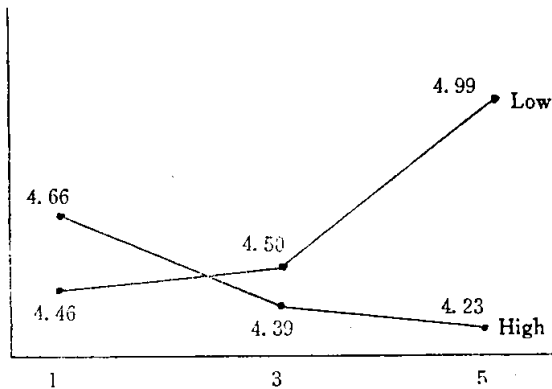


Fig. 1. Mean A₀ Score Over Different Levels of Repetition

in the differences between mean A₀ scores for subjects in each level of involvement. The test results for the low involvement subjects showed a significant difference between the mean A₀ score of subjects in the single exposure condition and in the five exposure condition. A significant difference was also found in the mean A₀ scores of subjects in the three exposure condition and in the five exposure condition ($p < .05$ for both cases). Finally, the test results for the high involvement subjects showed a significant difference in mean scores between subjects in the single exposure condition and subjects in the five exposure condition ($p < .05$). As shown in Table 4, an interaction effect was found between repetition level and involvement level ($F = 8.16$, $p < .01$). In summary, as repetition level increased from one to three to five, the brand attitudes (A₀) of low involvement subjects became more favorable, and the brand attitudes of high involvement subjects became more unfavorable. It was also found that a wearout effect of repetition appeared when high involvement subjects were exposed to the commercial five times, while low involvement subjects' attitudes became more favorable when they were exposed five times. These results supported H I-1 and H I-2.

The effects of ad repetition on brand attitudes measured by A_{act} scores were then analyzed. Table 3 and Figure 2 show these results. It was found that as subjects were exposed to more ads, the low involvement subjects' A_{act} became

more favorable ($F=4.18$, $p<.05$, see Figure 2), but the high involvement subjects' A_{act} did not change significantly ($F=2.06$, see Figure 2), Therefore, it can not be said that a significant wearout effect was found for high involvement subjects with A_{act} measure, even if the hypothesis was directionally supported. Tukey's studentized range (HSD) test was applied to check the significance in differences between mean A_{act} scores of low involvement subjects. A significant difference was found in mean A_{act} scores only between subjects of the single exposure condition and subjects of the five exposure condition ($p<.05$). Even though high involvement subjects' A_{act} did not change significantly across different levels of repetitions, an interaction effect was found between repetition level and involvement level in the analysis by two-way ANOVA ($F=5.36$, $p<.01$, see Table 5). In summary, when A_{act} was used for the measure of brand attitudes, it was found that as repetition level increased from one to five, the brand attitudes (A_{act}) of low involvement subjects became more favorable. However, it was not found that the brand attitudes

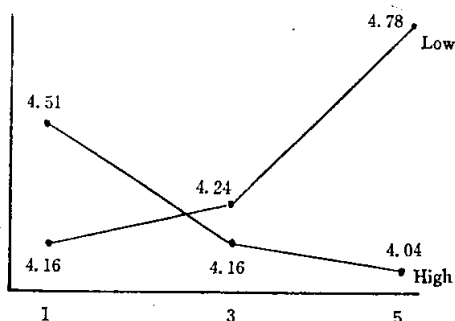


Fig. 2. Mean A_{act} Score Over Different Levels of Repetition

Table 5. Interaction between Rep. and Inv. (Dep. = A_{act})

Source	d.f.	SS	MS	F	PR > F
Repetition	2	2.25	1.13	.81	.445
Involvement	1	1.81	1.81	1.30	.254
Rep × Inv	2	14.93	7.47	5.36	.005
Error	294	409.36	1.39	—	—
Total	299	428.37	—	—	—

(A_{act}) of high involvement subjects became significantly less favorable. These results supported H I-1, but did not support H I-2.

Hypotheses Set II

In the analyses for Hypotheses Set I, it was found that as repetition level increases from one to five, the high involvement subjects' A_0 became less favorable and the low involvement subjects' A_0 became more favorable.

To support H II-1, the mean of high involvement subjects' brand-related responses (computed by subtracting the number of negative brand-related responses from the number of positive brand-related responses) of the five exposure condition has to be smaller than that of the single exposure condition. However, the result from Analysis of Variance failed to show significant differences among the three means ($F=.03$, see also Figure 3). Therefore, H II-1 was not supported when the A_0 measure was used for brand attitudes.

To support H II-2, the mean of low involvement subjects' ad-related responses (computed by subtracting the number of negative ad-related responses from the number of positive ad-related responses) of the five exposure condition has to be greater than that of the single exposure condition and that of the three exposure condition. In this case, it was found from Analysis of Variance that there were significant differences among means for one, three, and five exposure conditions ($F=5.07$, $p<.01$). Additionally, Tukey's studentized range (HSD) test showed that the mean ad-related responses in the five exposure condition was greater than that in the single and three exposure conditions ($p<.05$ for both cases, see also Figure 4). These results supported H II-2, when A_0 was used as a measure of brand attitudes (see Figure 1).

Since A_{act} was another measure for brand attitudes, a similar analysis was conducted with A_{act} . In the results for Hypotheses Set I, it was reported that as repetition level increased from one to five, low involvement subjects' A_{act} became more favorable, but high involvement subjects' A_{act} did not change significantly. As described previously, there were insignificant differences among the three means of high involvement subjects' brand-related responses (see

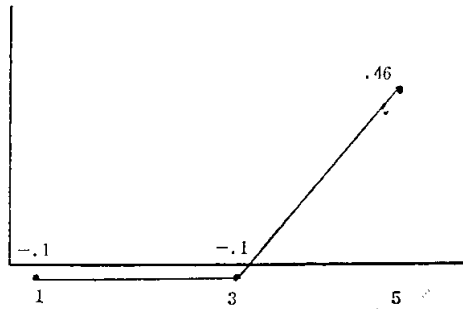


Fig. 3. Mean Brand-related Responses of High Involvement Subjects Over Different Levels of Repetition

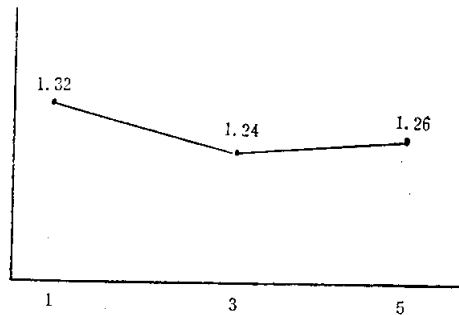


Fig. 4. Mean Ad-related Responses of Low Involvement Subjects Over Different Levels of Repetition

Figure 3). Since high involvement subjects' both brand-related responses and A_{act} did not change across different levels of repetition (see Figure 2), it may be said that H II-1 was supported when A_{act} was used as a measure of brand attitudes. For the directional change of low involvement subjects' ad-related responses, it was previously reported that ad-related responses did not change from the single to the three exposure condition, but became abruptly favorable from the three to the five exposure condition (See Figure 4). This directional change was consistent with A_{act} change of low involvement subject across different levels of repetition (see Figure 2). Therefore, H II-2 was supported with the measure of A_{act} for brand attitudes.

V. Conclusions

1. Discussion of Results

The Hypotheses Set I was established to investigate whether repetition effects on brand attitude formation would vary with the consumers' involvement levels. When A_0 was used for a measure of brand attitudes both H I-1 and H I-2 were well supported. However, when A_{act} was used as a measure of brand attitudes, H I-2 was not supported. This means that high involvement subjects' A_{act} were not significantly negatively influenced by more repetitions, while their A_0 were significantly negatively influenced by more repetitions. It is therefore suspected that A_{act} might be less influenced by brand-related beliefs or ad attitudes than is A_0 . For example, even if consumers think an import product is good (A_0), they may think it is not a good idea to buy it because it is an import (A_{act}). This finding is similar with Wright's (1973) finding that "the more removed the acceptance measure is from that topic defined by message arguments, the less direct the mediating role of message activated cues (p. 57)."

The Hypotheses Set II was established to investigate whether the major spontaneous responses mediating brand attitudes vary with consumers' involvement level. To summarize the results, H II-1 was supported with the A_{act} measure but not with the A_0 measure, and H II-2 was supported with both A_{act} and A_0 measures. Therefore, it can be said that ad-related responses were strong mediators for the low involvement consumers' brand attitude formation. In the previous studies, it was often found that the directional change of cognitive responses across different levels of repetition was not consistent with the directional change of brand attitudes across different levels of repetition. The findings in this study provide evidence supporting the notion that it is more reasonable to include thoughts and feelings (cognitive and affective responses) for the study of consumers' response rather than to include only

thoughts (cognitive responses).

In sum, the findings for Hypotheses Set I imply that ad repetition is effective for low involvement consumers, but ineffective or negatively effective for high involvement consumers. The findings in relation to Hypotheses Set II has provided some support for the view that it is reasonable to consider all aspects of the spontaneous responses rather than including only cognitive responses for the study of the mediating effects of spontaneous responses on brand attitudes over different levels of repetition.

2. Limitations of the Study

Since this research was conducted in an experimental setting, it has a limitation in external validity like any other experimental study. However, some attempts were made to improve the external validity. An advertisement of a real product was used. The ad had been aired previously but only in different parts of the country and not in the region where the experiment took place. In addition, the advertisement was professionally embedded in a real television program.

In addition, for all practical purposes, this research can be considered a test with an advertisement of a high-importance product with conveniently chosen subjects. In other words, the Hyundai Excel cannot be representative of all products. Similarly, the subjects cannot be representative of all potential buyers. These aspects also limit the generalizability of the findings in this study. Even though the weak external validity or generalizability is a limitation to an experimental study such as this, the natural research settings may not necessarily be better, since exogenous variables may complicate the situation. Realistically, it is impossible to control all potential exogenous variables. Therefore, as long as internal validity exists, specification of the potential limits of the findings does not necessarily significantly diminish their value.

Another limitation in this study is that the advertising effects were measured immediately after the television program ended. Consumers' buying decisions are usually made at least a few days or weeks after exposure to the advertise-

ments (particularly for an important product such as an automobile). If the buying decision is made later, the initial brand attitudes might change to some degree between exposure and actual buying decision. While the practicability of the findings in relation to brand attitudes may be reduced for this reason, they provide some important insights for advancing the state of the art in this stream of research.

Finally, a limitation exists in relation to the coding method of the answers to the open-ended question for spontaneous responses. Coding of answers to open-ended questions, to some degree, depends on the subjective judgments of judges, even though coding criteria are pre-specified. If other judges were employed for coding the spontaneous responses, there might have been some differences in the results.

2. Future Research Directions

This study investigated how spontaneous responses mediate brand attitude formation across different repetition levels. The spontaneous responses were divided into brand-related responses and ad-related responses. However, the spontaneous responses can also be divided into cognitive responses and affective responses. Then another possible research issue can be proposed as follows. If high involvement consumers' brand attitudes are more likely to be mediated by brand beliefs (cognitions) than ad attitudes, their brand beliefs may be mediated by cognitive responses more than affective responses. Similarly, if low involvement consumers' brand attitudes are more likely to be mediated by ad attitudes (affects) than brand beliefs, their ad attitudes may be mediated by affective responses more than cognitive responses. Future research may investigate whether high involvement consumers' brand attitude change pattern is consistent with the change pattern of their cognitive responses across different levels of repetitions, and whether low involvement consumers' brand attitude change pattern is consistent with the change pattern of their affective responses across different levels of repetitions.

Other research directions focus on the limitations of this study. In the

experiment, only the experimental commercial was embedded in the TV program. In reality, two or more different commercials are usually embedded in a program. To make it more realistic, the experimental television program should include not only the experimental commercial but also other commercials. It was pointed out that since advertising effects were measured immediately after the television program ended, the practicability of the findings in this study may be reduced. One way to increase the realism and usefulness of the research is to conduct a longitudinal study. Finally, a limitation was pointed out regarding the coding method of subjects' spontaneous responses. To reduce the problem arising from judges' subjective judgments, it is suggested to develop more objective and clear criteria to code the spontaneous responses, and to develop a method to assess inter-judge coding reliability.

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