



CHICAGO JOURNALS

Journal of Consumer Research, Inc.

Predicting the Effectiveness of Different Strategies of Advertising Variation: A Test of the Repetition-Variation Hypotheses

Author(s): David W. Schumann, Richard E. Petty and D. Scott Clemons

Reviewed work(s):

Source: *Journal of Consumer Research*, Vol. 17, No. 2 (Sep., 1990), pp. 192-202

Published by: [The University of Chicago Press](http://www.jstor.org/stable/2626811)

Stable URL: <http://www.jstor.org/stable/2626811>

Accessed: 27/08/2012 19:53

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



The University of Chicago Press and Journal of Consumer Research, Inc. are collaborating with JSTOR to digitize, preserve and extend access to *Journal of Consumer Research*.

<http://www.jstor.org>

Predicting the Effectiveness of Different Strategies of Advertising Variation: A Test of the Repetition-Variation Hypotheses

DAVID W. SCHUMANN
RICHARD E. PETTY
D. SCOTT CLEMONS*

Two strategies for varying the content of ads over repeated presentations are distinguished, and the effectiveness of these strategies are examined at two different levels of consumer motivation to process the ads. Consistent with the hypotheses, experiment 1 found that a cosmetic variation strategy (variation in nonsubstantive features of an ad across multiple presentations) had greater impact on attitudes when motivation to process the ad was low (as induced by low personal relevance of the product). Experiment 2 found that a substantive variation strategy (variation in relevant product attributes across multiple presentations) was more influential when motivation to process the ad was high. These results are consistent with the Elaboration Likelihood Model of persuasion.

Throughout this century, consumer researchers have sought to understand how repeated advertising affects the consumer (see, e.g., Bogart 1984; Poffenburger 1923; for reviews see Craig and Sternthal 1986; Pechmann and Stewart 1989; Sawyer 1981). A number of research questions have been posed and addressed. How often must consumers be exposed to a product or brand before the product attributes and brand name are encoded, stored in memory, and available for retrieval? At what point during an advertising campaign will potential buyers form opinions about a product that may influence their future purchasing decisions? Crucial to the success of an advertising campaign is the need to know at what point the consumer grows tired of seeing and hearing repeated ads for the same product. Although there have been numerous studies addressing these questions regarding multiple exposures of the same ad, there has been relatively little research on the consequences of varying ads for the same product over re-

peated exposures. This research investigates the effectiveness of two different variation strategies in promoting a product over a repeated advertising schedule.

AD VARIATION

Multiple exposures of the same ad, though initially effective, can lead to diminished effectiveness as repetition increases (see, e.g., Appel 1971; Cacioppo and Petty 1979; Calder and Sternthal 1980). However, several researchers have found, either implicitly or explicitly, that the use of varied ads in a multiple-exposure campaign can forestall tedium. For example, in an experiment employing repeated and slightly varied print ads, McCullough and Ostrom (1974) found that, as repetition was increased, liking for the product also increased (see also, Gorn and Goldberg 1980; Mitchell and Olson, 1981).

Of greatest relevance for understanding the role of advertising variation are those few studies that have explicitly manipulated ad variation. Grass and Wallace (1969) employed the CONPAAD technique, in which clarity of the video picture is controlled and maintained by the viewer by continuously pressing a foot pedal. The frequency of pedal pressing was recorded automatically and interpreted by the researchers as a measure of interest (i.e., high frequency was interpreted as high interest level). After six exposures to the same commercial within a program, subjects demonstrated rapidly decreasing interest. However,

*David W. Schumann is assistant professor, Department of Marketing, Logistics, and Transportation, Stokely Management Center, University of Tennessee, Knoxville, TN 37996-0530. Richard E. Petty is professor of psychology at Ohio State University, Columbus, OH 43210. D. Scott Clemons is a doctoral candidate in the Department of Marketing, Logistics, and Transportation at the University of Tennessee, Knoxville. Experiment 1 was supported by grant BNS 84-18038 from the National Science Foundation. Experiment 2 was supported by a Faculty Fellowship Grant from the University of Tennessee College of Business Administration.

there was no significant loss of interest when six different commercials for the same product were shown. Unfortunately, attitudes toward the product were not assessed in this investigation.

In a more recent study, Burnkrant and Unnava (1987) employed an "encoding variability hypothesis" (Madigan 1969; Melton 1967) to explain why simply varying the copy of an ad campaign would be more effective (vis-à-vis brand recall and attitude measures) than multiple exposure to a single ad. Although brand recall was significantly better under varied conditions, attitudes were not affected.

The idea that varying ads is more effective than not varying ads is by no means new. For example, Sawyer (1981, p. 257) has noted, "It is well established that repetition of similar but nonidentical ads is more effective than repetition of identical ads in terms of both recall (Adams, 1916; Poffenburger, 1925) and persuasion (Heeler, 1972)." Although this sounds definitive, our brief review indicates that there is relatively little direct empirical support for the conclusion expressed. Furthermore, little or no work has been conducted on the specific characteristics of varied ads that may be important or the situations in which variation will be maximally effective.

An examination of previous literature makes it apparent that there are different strategies for varying ads. For example, ads can be varied by changing aspects of either the message itself or less substantive factors, such as the format, the illustrations, or the print font. It is not clear from prior research whether the type of ad variation is important and, if so, under what circumstances.

THE REPETITION-VARIATION HYPOTHESES

The repetition-variation hypotheses presented here are a framework for predicting under what conditions different ad-campaign variation strategies are most likely to be effective. The hypotheses segment variation strategies into two basic categories and make predictions as to when each strategy is more likely to be successful in influencing the consumer. One type of advertising strategy is to employ some form of *cosmetic variation* in which certain nonsubstantive features of the ads are altered while the basic product message is kept the same. These cosmetic features of an ad do not represent attributes of the product, nor are they essential to evaluating the merits of the product. In print advertising employing this strategy, features such as color, graphics, print fonts, and layout might differ across ads, yet all the ads within a campaign would contain the same substantive message. For example, the cigarette industry has often used changes in pleasant background scenery (e.g., lakes, mountains, streams) in the promotion of their products. In television, cosmetic features might include

action, music, color, voices, people, and so on. It is important to note that, although certain stimuli may serve as cosmetic aspects of an ad for certain products, for other types of products these same stimuli may constitute arguments for the use of the product. For example, one might consider changes in scenery for cigarette ads to be of a cosmetic nature. However, in the promotion of a vacation destination, the same scenes would probably be viewed as providing substantive information relevant to visiting that location.

In contrast to cosmetic variation, *substantive variation* is defined as a change in message content (i.e., arguments, attributes). In a substantive variation campaign, cosmetic characteristics of the ad (e.g., color, layout, print font) remain reasonably constant over repeated ad presentations, but the product arguments are varied. For example, a campaign of this type might employ identical illustrations and headings in each ad, yet the various ads would contain different reasons to use the product. Although substantive variation is probably rare in a pure sense, there have been numerous examples of promotions with arguments varied across ads. The Shell "Answer Man" campaign of a few years ago serves as an example. Each Shell ad posed one question and answer related to a Shell product. This campaign appeared in both print and television media. In sum, in both cosmetic and substantive variation strategies, repeated ads provide exposure to different stimuli across repetitions. What distinguishes the two strategies is whether the additional exposures provide more cosmetics or more substance.

The repetition-variation hypotheses to be introduced are consistent with the theoretical framework presented in the Elaboration Likelihood Model (ELM) of persuasion offered by Petty and Cacioppo (1979, 1981, 1986). In brief, the ELM posits the existence of two routes to persuasion. The "central route" is employed when individuals are both motivated and able to think about a persuasive communication (an ad for a product in this case). Under these conditions, people are expected to process the merits of the product as presented in the ad to make an informed purchase decision. For individuals either unmotivated or unable to think about the ad, attitudes will either be unaffected, or they may be influenced by cues in the immediate surroundings. Cues such as characteristics of the endorser (Petty, Cacioppo, and Schumann 1983) and the mere number of arguments presented (Petty and Cacioppo 1984) have proved effective when motivation or ability to process a message is low (see Petty and Cacioppo 1986 for a review). When attitudes are changed by such cues, the "peripheral route" has been followed. The ELM has been demonstrated to be a viable framework for predicting advertising communication effects (see, e.g., Kardes

1988; Moore, Hausknecht, and Thamodaran 1986; Petty et al. 1983; Yalch and Elmore-Yalch 1984).

Application of the principles of the ELM to the repetition-variation context suggests that motivation and ability to process an ad will act to moderate the effectiveness of the two repetition-variation strategies. In the current research, subjects received one or multiple exposures to an ad that employed one of the variation strategies (cosmetic or substantive), or all ads were held constant across repetitions. At any one level of message repetition, the ability to process an ad was held constant, but motivation to process the ad was manipulated by varying the personal relevance of the message. Cosmetic variation was expected to have the greatest impact when motivation to process is low (i.e., low product-relevance conditions). Substantive variation was predicted to be more influential when motivation to process is high (i.e., high product-relevance conditions). Specifically, our hypotheses were:

H1: Cosmetic variation in repeated ads will have a greater impact on attitudes when the product is of low rather than high personal relevance to the recipient.

H2: Substantive variation in repeated ads will have a greater impact on attitudes when the product is of high rather than low personal relevance to the recipient.

These predictions are consistent with the ELM and, if supported, would demonstrate the conditions under which each type of variation strategy is effective.

Two studies were undertaken to test these hypotheses. The first study explored the effects of a cosmetic variation strategy, and the second investigated the influence of a substantive strategy. In each study, motivation to process the ads was varied by using a manipulation of personal relevance validated in prior research (e.g., Petty et al. 1983). In addition, the studies employed a technique that allowed subjects to be exposed to both audio and visual advertising stimuli. Each subject viewed a slide presentation of print ads and program material illustrations, and this was accompanied by an audiotape of the commercial and program material. It was believed that this technique could simulate the processing conditions employed in viewing the audiovisual stimulus materials found on television yet keep extraneous factors constant to provide a strong test of the hypotheses.

METHODS FOR STUDY 1

Subjects and Design

Study 1 was designed to test the first of the repetition-variation hypotheses (i.e., the situational influence of a cosmetic variation strategy). The key mod-

erating variable, motivation to process the ad, was made operational in terms of the personal relevance of a target product to the subject at the time of the study.

A total of 294 male and female undergraduates at a large state university participated for extra credit in their psychology classes. Between 26 and 30 subjects were assigned randomly to each cell in a two (product relevance: high or low) by two (cosmetic variation: same or different ads) by two (repetition: four or eight exposures) factorial design. The experiment was conducted in a laboratory setting where subjects participated in groups of three to 10 per session. The repetition and variation conditions were common to each subject within a particular session; however, within each session, subjects were assigned randomly to either the high or low product-relevance conditions. In addition, 64 subjects were assigned randomly to two control groups (32 per group). The control groups received a single ad exposure to the target product under either high or low product-relevance conditions.

Procedure

At the beginning of a session, subjects received a two-page introductory handout with a cover story that included the product-relevance manipulation. Subjects were asked to read both pages carefully. The first page informed subjects that they would be participating in a "media evaluation" study and would be viewing a slide presentation with an accompanying audio script. It was conveyed to the subjects that this type of procedure was often employed by network personnel when presenting their ideas for pilot programs to executives. Subjects were further told that they would be viewing slide representations of product commercials being developed by some of the potential program sponsors. They then were told that they would be asked to evaluate the programming and, in return for their efforts, would be allowed to choose a free gift to be distributed at the end of the study. The second page of the handout introduced some of the major sponsors (advertisers) of the study, and subjects read brief paragraphs describing five of the sponsors' products. The second page also revealed the product category from which the subject was to select a free gift.

After the subjects had read the introductory handout, they were shown the slide presentation. The presentation consisted of four short program segments (i.e., three to four minutes each) geared toward a college audience (e.g., a segment on campus cheating) and 20 ads lasting 22–25 seconds each. At the conclusion of the presentation, subjects received a questionnaire containing the dependent measures. Each subject completed the evaluation booklet and was then provided with a complete explanation of the study. After the researchers fielded questions from the group, the subjects were thanked and dismissed.

Independent Variables

Product Relevance. The product-relevance manipulation was embedded in two places in the introductory handout. First, highlighted on the second page was the offer for a free gift. Subjects were informed that they would be able to choose one of several brands of writing instruments (high relevance of the target product) or one of several brands of mouthwash (low relevance of the target product, but high relevance of a product *other than* the target product); one brand of each product appeared in the presentation. To augment the relevance manipulation, the section on the second page of the handout that introduced the advertisers and their products differed in regard to the introduction of the target product, the Omega 3 pen. High product-relevance subjects were told that the Omega 3 pen would soon be test marketed in medium-sized cities in the Midwest, including the subjects' own city; low product-relevance subjects were told that, for the next three years, the Omega 3 pen was to be test marketed and available only on the East Coast. Thus, subjects in the high product-relevance conditions were led to believe that they would soon be making a decision about the product class and that the product would be available in their area in the near future. Low product-relevance subjects, conversely, did not expect to make a decision about writing instruments (they expected to make a decision about mouthwash) and were led to believe that the Omega 3 product would not be available for purchase in their area in the foreseeable future. This type of product-relevance manipulation was shown in previous research to be effective in varying motivation to think about an ad (see Petty et al. 1983; Sanbonmatsu, Shavitt, and Sherman, in press).

Cosmetic Variation. Eight different ads for the bogus target product (Omega 3 pens) were used to manipulate ad variation. Each ad varied with respect to the picture of the product endorser, the print type, layout, order, and wording of the same substantive arguments (see Fig. 1 for an example of cosmetic differences between ads). The endorsers were people from various career fields (i.e., architect, fashion designer, construction foreman, educator, student, homemaker, engineer, and astronaut). Although the argument content for the product in each ad remained constant, the wording of the arguments varied slightly among the eight ads. Three alternative wordings were developed for each argument and pretested to assure equal strength. These were then counterbalanced across the eight ads, with each ad containing six arguments. The audio scripts for each ad were also varied to account for the changes in the argument wording viewed on the screen.

To protect against possible ordering effects in the varied conditions, we counterbalanced the ads in such a way that a portion of the subjects saw ad num-

ber one first, a portion saw ad number two first, a portion saw ad number three first, and so on.

Repetition. Subjects were exposed to one of three levels of ad repetition. Four and eight exposures represented moderate and high repetition frequencies, respectively.¹ In the control groups, subjects received only one exposure to one of the eight ads, and these ads were also counterbalanced. In the four-repetition conditions, subjects were exposed to either four identical ads or four cosmetic variations of the ad. Similarly, subjects in the eight-repetition conditions either viewed the same ad eight times or were exposed to eight cosmetic variations of the ad. The positions of the target Omega 3 ads within the overall program were held constant across the two levels of the variation manipulation. In addition, subjects were given multiple exposure to two nontarget products during the presentation to reduce the potential for discovery of the true purpose of the study. The positions of these ads were also held constant.

Dependent Measures

Several kinds of dependent measures were employed in the study. Of greatest importance, attitude measures were taken for both the target product and the advertising campaign. A general measure of attitude toward the product was obtained by subject response to a nine-point bipolar semantic differential scale (ranging from -4 = "dislike very much" to +4 = "like very much"). The same scale was employed to assess overall attitude toward the advertising campaign.² In addition to these, items addressing the nontarget ads were included in the questionnaire booklet to help maintain the cover story.

Recall of the target product and brand was assessed by the request that subjects list all the products and the respective brands they remembered viewing during the presentation. An overall measure of recall was derived in the following manner. Subjects received a score of 2 if they recalled both the product and the brand, 1 if they recalled either but not both, and 0 if they recalled neither. Finally, items were included to provide evidence for the critical assumption that the personal relevance manipulation would affect the subjects' propensity to think about the pen.

RESULTS OF STUDY 1

Two analyses of variance (ANOVAs) were performed on each measure. Initially, an ANOVA was

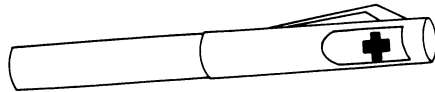
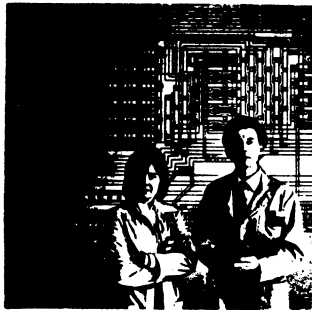
¹"Moderate" and "high" levels of repetition are not meant in any absolute sense but refer to the amount of repetition relative to the current viewing situation.

²In addition to these general attitude measures, measures of more specific evaluations of both the product (e.g., satisfying/dissatisfying) and the advertising (e.g., boring/exciting) were taken. These produced a consistent but weaker pattern of results than the more general attitude items.

FIGURE 1
COSMETIC VARIATION

ENGINEERS HAVE DISCOVERED
O M E G A 3

With the precision you've come to expect from
the company that engineered the Swiss Army Knife.



Special erasing feature eliminates smudges.

With the combined effect of the finely engineered benzonite writing tip and the special pressurized cartridge, write at any angle on almost any surface.

Form fitting sloped design eliminates writer's cramp and calluses.

Adjustment mechanism in the OMEGA 3 allows you the choice of fine, medium, and wide point writing.

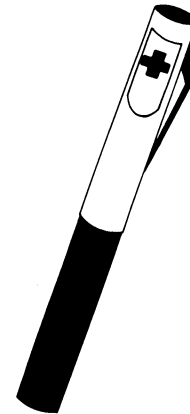
New ink polymer provides long lasting cartridges.

The ultimate multi-purpose writing instrument, inexpensive and just right for the homemaker, student, or professional.

SWISS ARMY COMPANY - GENEVA, SWITZERLAND

ARCHITECTS HAVE DISCOVERED
O M E G A 3

With the precision you've
come to expect from the
company that engineered
the Swiss Army Knife.



With the combined effect of the finely engineered benzonite writing tip and the special pressurized cartridge, write at any angle on almost any surface.

Erases your mistakes and leaves no smudges.

New ink polymer provides long lasting cartridges.

The OMEGA 3 writing point is adjustable giving you a choice of fine, medium, or wide point lines.

No writer's cramp or calluses with precision sloped design.

The ultimate multi-purpose writing instrument, inexpensive and just right for the homemaker, student, or professional.

SWISS ARMY COMPANY - GENEVA, SWITZERLAND

NOTE.—Cosmetic variation includes changes in endorser, layout, font, color of pen, wording, and order of the same substantive arguments.

employed for analyzing the results from the full 2×2 design. Upon reviewing the output of this initial analysis, we observed several interactions that included the product-relevance variable. Since this variable is the key to assessing the viability of the hypotheses, it was decided to evaluate low and high product-relevance conditions separately. This permitted a clearer indication of the nature of the differences in repetition and cosmetic variation at the different product-relevance levels. Thus, separate two (repetition) by two (variation) ANOVAs were conducted at each level of product relevance.

A second consideration involves the variation manipulation. Since variation is an important factor in the hypotheses, simple main-effects contrasts were performed for the four- and eight-exposure conditions under both high and low relevance. Finally, the Dunnett procedure was employed to compare each of the experimental means with the appropriate one-exposure control group.

Effect of Personal Relevance on Reported Thinking

The intent of the product-relevance manipulation was to influence the subjects' motivation to think about the critical ad and the product it featured. To assess this, we asked subjects to indicate how much thinking they did about pens during the slide show and how much thinking they did about mouthwash. Relative thought was determined by subtracting the amount of reported thinking about the mouthwash (the free gift for low product-relevance subjects) from the amount of reported thought about the pen (the free gift for subjects in the high product-relevance conditions). In the one-exposure control conditions, which provide a comparison between high and low relevance uncontaminated by the repetition and variation manipulations, differences in relative thought about the products were significant ($t(62) = 2.65$, $p = .01$, effect size $[ES] = .32$). Subjects in the high

TABLE 1
MEANS OF VARIATION STUDIES

Experiments	Conditions					
	Low product relevance			High product relevance		
	Single exposure	Moderate exposure	High exposure	Single exposure	Moderate exposure	High exposure
Cosmetic variation study:						
Product recall:						
Single ad	1.41			1.20		
Same ad		1.50*	1.87 ^a		1.70 ^a	1.76 ^a
Different ads		1.86 ^{a,*}	1.79 ^a		1.81 ^a	1.90 ^a
Attitude toward product:						
Single ad	2.00			2.38		
Same ad		.93 ^{a,*}	1.03		1.60	1.59
Different ads		2.10*	1.38		1.69	1.93
Attitude toward campaign:						
Single ad	.63			1.09		
Same ad		-.64 ^{a,+}	-.46		-.13	-.52
Different ads		.45 ⁺	-1.34 ^a		-.11	.07
Substantive variation study:						
Product recall:						
Single ad	1.30			1.70		
Same ad		1.85 ^a	1.90 ^a		1.85	1.95
Different ads		1.79 ^a	1.90 ^a		1.90	2.00 ^a
Attitude toward product:						
Single ad	.90			1.20		
Same ad		1.25	1.50		1.80 ⁺	1.55
Different ads		1.85	1.70		2.55 ^{a,+}	2.05
Attitude toward campaign:						
Single ad	.40			-.05		
Same ad		-.12	-.90		-1.05 ^{**}	-.15
Different ads		-.45	-.60		1.15 ^{**}	-.30

^a Significantly different from the control condition ($p < .05$).

⁺ Variation effects ($p \leq .10$).

* Variation effects ($p \leq .05$).

** Variation effects ($p \leq .01$).

product-relevance conditions thought more about the pen relative to the mouthwash ($\bar{X} = 1.63$) than subjects in the low product-relevance conditions ($\bar{X} = -.34$). An overall ANOVA on this measure including all subjects also produced a significant main effect for the relevance manipulation ($F(1,279) = 6.47$, $p < .01$, $ES = .15$).³

Recall Measures

Subjects were asked to list all of the products they had seen during the slide program as well as the respective brands. A three-way interaction was found for recall of the pen and brand within the product list ($F(1,222) = 4.41$, $p < .04$, $ES = .13$, see Table 1). Sep-

arate analysis by product relevance revealed a significant repetition-by-variation interaction, but only for subjects in the low product-relevance conditions ($F(1,112) = 7.56$, $p < .007$, $ES = .25$). Analysis of simple main effects revealed a significant difference in variation levels at a moderate number of exposures ($F(1,143) = 6.61$, $p = .01$, $ES = .21$) but not at a high amount. This result occurred because it took only four exposures to reach maximum recall when the ad was varied, but eight exposures were required for maximum recall when no variation occurred. In the high-relevance conditions, recall of the pen product reached maximum with four exposures regardless of ad variation.

Attitudes

Subjects' responses to a question measuring attitude (liking) toward the product yielded a marginal main effect for variation ($F(1,222) = 3.18$, $p < .08$, $ES = .12$; see Table 1). In general, when the same ad was

³In addition, two other main effects were present. An effect for repetition ($F(2,279) = 15.4$, $p < .001$, $ES = .23$) indicated that thinking about the pen vs. the mouthwash increased as more pen ads appeared, and an effect for the variation manipulation ($F(1,179) = 3.32$, $p < .04$, $ES = .13$) indicated that the varied ads induced more relative thought about the pens than did the same ads when repeated.

repeated, attitude toward the product was less favorable than when subjects viewed the cosmetically varied campaign. Importantly, however, most of the influence of variation is attributable to the low product-relevance conditions. Separate analyses for product relevance revealed a similar variation main effect under low-relevance conditions ($F(1,112) = 3.59, p = .06, ES = .18$) that was absent under high-relevance conditions ($F < 1$). A simple main-effects analysis of the low-relevance conditions revealed that subjects viewing four varied ads were significantly more favorable toward the product ($F(1,143) = 4.34, p < .04, ES = .17$) than subjects who viewed the same ad four times. Furthermore, low product-relevance subjects viewing four varied ads retained the same level of liking for the product as the control group, who viewed only one exposure. In contrast, those subjects who saw the same ad four times liked the product significantly less than the control subjects. In sum, variation had an impact on product attitudes for low, but not high, product-relevance subjects.

A similar pattern emerged on the measure of attitude toward the advertising campaign. To better understand a three-way interaction that emerged ($F(1,222) = 4.15, p = .04, ES = .13$), we performed separate analyses for product relevance (see Table 1). No variation effects were observed under high product relevance. Importantly, a repetition-by-variation interaction for subjects in the low-relevance conditions was found ($F(1,112) = 4.59, p = .03, ES = .20$). Contrast analysis revealed that low product-relevance subjects who viewed four varied ads for the target product tended to be more favorable toward the campaign than subjects who viewed the same ad four times ($F(1,143) = 2.72, p = .10, ES = .13$). By eight exposures, however, the variation effect was gone. Comparison with the one-exposure controls revealed that, when the campaign used varied ads, less favorable attitudes did not emerge until the highest exposure levels. In sum, as with the product attitude data, attitudes toward the campaign were influenced by variation under low, but not high, relevance conditions.

METHODS FOR STUDY 2

Experiment 1 provided support for our first hypothesis: cosmetic variation in repeated ads is more likely to influence attitudes when motivation to process an ad (as induced with product relevance) is low rather than high. Study 2 was designed to test the second hypothesis: substantive variation of repeated ads is more likely to influence attitudes when motivation to process an ad is high rather than low. The overall design and most of the basic methods employed in the first study were purposely retained in the second experiment. Differences between the methods of the two studies are noted in the following description.

Subjects and Design

A total of 200 male and female undergraduates at a large state university participated in the second study to earn extra credit in their introductory marketing classes. Twenty subjects were assigned randomly to each cell in a two (product relevance: high or low) by two (substantive variation: same or varied ads) by two (repetition: three or five exposures) factorial design. As in study 1, high and low relevance, one-exposure control groups (with 20 subjects per cell) were employed. The experiment was again conducted in a laboratory setting with four to 10 people participating in each session, and the same dependent measures were used.

Independent Variables



Product Relevance. The product-relevance manipulation, which was intended to vary subjects' motivation to process the target ad, was virtually identical to that used in the first study. The manipulation was again embedded in two places in the introductory handout. The high-relevance product was again a pen, but subjects in the low product-relevance conditions were told that they would be able to choose from several 10-week trial magazine subscriptions, one of which would be advertised in the presentation. All subjects were exposed to an ad for *Time* magazine twice during the slide presentation.

Substantive Variation. Subjects saw either target ads with identical pairs of message arguments for the Omega 3 product ("same" variation condition) or target ads that varied with respect to the argument pairs for the product ("different" variation condition). In direct contrast to study 1, the cosmetic aspects (i.e., picture of the pen, print style, and layout of the ads) remained the same across all conditions. Ten strong-message arguments were developed in pretesting and embedded across five visual ads, each ad containing two randomly paired arguments. The visual ads differed only in respect to the pairs of arguments presented in each. The five target ads contained a visual representation of the Omega 3 writing instrument and an indication that the pen was from the makers of the Swiss Army knife. This was followed by one of the five pairs of arguments (see, e.g., Fig. 2).

While viewing the slides, subjects also listened to an audiotape containing the same two message arguments that were being viewed. To prevent ordering effects in the varied conditions, we employed the same ordering strategy in study 2 that was used in study 1.

Repetition. In addition to the one-exposure control groups, two other levels of message repetition were used. Specifically, three and five exposures were em-

FIGURE 2
SUBSTANTIVE VARIATION

<p><i>Engineers have discovered Swiss Army Precision</i></p>  <p>OMEGA 3</p> <p><i>The special pressurized cartridge allows for writing at any angle.</i></p> <p><i>Available in an assortment of colors.</i></p> <p>THE SWISS ARMY COMPANY GENEVA, SWITZERLAND</p>	<p><i>Engineers have discovered Swiss Army Precision</i></p>  <p>OMEGA 3</p> <p><i>The Benzenite tip means smooth, no-skip writing.</i></p> <p><i>Sloped design and optimal balancing makes writing effortless.</i></p> <p>THE SWISS ARMY COMPANY GENEVA, SWITZERLAND</p>
---	--

NOTE.—Substantive variation includes changes in the substance of the argument messages while holding cosmetic variation (i.e., illustration, layout, font) constant.

ployed to represent moderate and high repetition frequencies, respectively. For this study, it was decided to reduce the number of ads representing the moderate and high levels of repetition compared with study 1. Given the reduction in arguments presented per ad (from six in study 1 to two in study 2), it was felt that the effect for variation would appear with fewer exposures. In addition, the number of ads shown in a block was reduced from four to three. As in study 1, nontarget ads for two additional products were repeated two times each to reduce the potential for discovery of the true purpose of the study.

RESULTS FOR STUDY 2

The same analysis strategy was employed as in study 1. That is, two analyses of variance (ANOVAs) were performed on each measure ($2 \times 2 \times 2$ overall, then 2×2 's for high and low product relevance). As in the first study, simple main effects were employed to make comparisons within the product-relevance

and repetition conditions. Also, the Dunnett test permitted comparison between the control conditions and the factorial design cells. Hypothesis 2 states that substantive variation will have a greater effect under high than low product-relevance conditions.

Effect of Personal Relevance on Reported Thinking

As in the first experiment, it was expected that the personal relevance manipulation would affect the amount of thinking subjects did about the pen advertised. Using the same measure as in experiment 1, we found that one-exposure control subjects tended to report relatively more thought about the pen than the magazine under high product-relevance ($\bar{X} = .30$) than under low product-relevance conditions ($\bar{X} = -1.25$; $t(38) = .68$, $p < .10$, $ES = .19$). When subjects in all exposure conditions were considered,

the main effect for relevance was highly significant ($F(1,187) = 8.63, p < .004, ES = .21$).⁴

Measures of Recall

Subjects were asked to list all of the products and brands they had seen during the slide program. Under low relevance, the only effect observed was that all repeated-exposure groups had better recall than the one-exposure control. The high product-relevance control group started out with somewhat greater recall, and repetition did not improve upon this until the highest exposure of the varied ads. No other effects were observed.

Attitudes

Subjects were asked to rate their attitudes toward both the product and the advertising campaign using the same global attitude measures employed in study 1 (see Table 1).⁵ A variation main effect was found for attitude toward the product ($F(1,152) = 5.03, p < .03, ES = .18$), reflecting more favorable attitudes with varied ads. In addition, a marginal main effect for product relevance was observed ($F(1,152) = 3.26, p < .08, ES = .14$). The more favorable attitudes under high than low product relevance may have been due to greater processing of the strong arguments under high product relevance, producing more persuasion. Separate analyses by relevance revealed a significant variation main effect for subjects in the high product-relevance conditions ($F(1,156) = 3.80, p = .05, ES = .22$) but not for low product-relevance subjects. Simple main-effects tests under high product relevance revealed a marginally significant difference under moderate exposure conditions ($F(1,95) = 2.98, p < .09, ES = .17$). Subjects receiving four substantively varied ads under high product-relevance conditions liked the product more than those who saw the same ad repeated. Comparisons with the one-exposure control groups revealed that moderate exposure to substantively varied ads led to significantly more favorable attitudes under high, but not low, product-relevance conditions.

Analysis of the subjects' attitudes toward the advertising campaign showed several effects. Once again a variation main effect emerged ($F(1,152) = 4.57, p = .03, ES = .17$), with more favorable campaign attitudes when the ads were varied. In addition, a main effect for product relevance surfaced ($F(1,152) = 3.73, p = .05, ES = .17$), with more favorable attitudes under high than low product relevance. Sepa-

rate analyses under high and low product relevance revealed both a main effect for variation and a two-way variation-by-repetition interaction for subjects in the high product-relevance conditions ($F(1,76) = 4.56, p < .04, ES = .24$ and $F(1,76) = 5.99, p < .02, ES = .24$, respectively). No significant effects emerged under low product-relevance conditions. Simple main-effects tests under high product relevance revealed more favorable ratings for subjects in the varied-ads/moderate-exposure condition than in the comparable condition in which the ads were not varied. In general and as predicted, substantive variation had a greater impact on subjects' attitudes in the high than in the low product-relevance conditions.

DISCUSSION

The repetition-variation hypotheses were offered as a framework for predicting under what conditions each type of variation strategy (cosmetic and substantive) is more likely to be effective in influencing consumer attitudes. The two studies presented here offer evidence of the predictive validity of the hypotheses. In general, the current research has provided initial support for the view that (1) cosmetic variation in repeated ads has a greater effect on overall attitudes when product relevance (motivation to process) is low and (2) substantive variation in repeated ads has a greater impact on overall attitudes when product relevance (motivation to process) is high. This conceptual framework may prove useful in accounting for the conflicting results from previous studies of message repetition where little attention was paid to the nature of the ad variation strategy employed or to recipient differences in motivation to process the ads.

The first study addressed the issue of cosmetic variation in repeated ads. We found that cosmetic variation enhanced recall of the product and brand for subjects for whom the advertised product was of low personal relevance. However, recall of the product was also influenced by the number of exposures in the campaign. Cosmetic variation appeared to make a difference in an individual's recall ability, but only when a moderate number of ads was shown. When individuals were subjected to a heavier dose of ads, recall reached a ceiling, and thereafter the act of varying the ads was inconsequential.

Of greater interest, the attitude results in study 1 provided support for the view that cosmetic variation has a larger effect under low than high product-relevance conditions. No effects for cosmetic variation were observed when product relevance was high. When product relevance was low and repetition was moderate, subjects who were exposed to the varied ad campaign liked the product and advertising significantly more than those exposed to the same ad repeated. However, when product relevance was low but repetition was high, the effect of varying ads was

⁴As in the first study, main effects were also obtained for repetition ($F(2,187) = 3.26, p < .04, ES = .13$) and variation ($F(1,187) = 3.45, p < .06, ES = .13$); see n. 3.

⁵As in study 1, more specific evaluative items produced a consistent, but weaker, pattern.

lost as attitudes of subjects exposed to the varied ads became less favorable and equivalent to those of subjects exposed to high repetitions of the same ads. One possible explanation for the loss of the variation effect under high repetition conditions is that the cosmetic variation strategy employed in study 1 centered around a theme (i.e., people in different career groups endorsing the product). It might be possible that, despite viewing cosmetically different ads, repeated exposure to the theme invited a potential source of negative reaction. Not only have the subjects been heavily exposed to the product, they must also digest the effects of a repeated theme. This analysis suggests that a negative reaction may be forestalled or eliminated at high exposure levels with more complex cosmetic variations than we employed. A second explanation might be that the variation effects found under the moderate repetition conditions reflect a common belief in advertising that three exposures are optimal and that beyond three exposures the ads lose any compounded advantage (see Sawyer 1981 for a review).

The attitude findings from study 2 provided support for the hypothesis about substantive variation. That is, subjects who viewed the substantively varied ads and were motivated to process them because of their high relevance rated the product and advertising campaign significantly higher than did similarly motivated subjects who saw the same ad repeated. When product relevance was low, however, substantive variation in the ads had no significant effect. As in study 1, it is interesting to note that the variation effect was influenced by the number of exposures. Substantive variation had an impact only on high product-relevance subjects who were exposed to a moderate number of ads. For those exposed to a heavy dose of repetition, the variation strategy was of no consequence.

The repetition-variation hypotheses have important implications for marketing professionals involved in media planning. For marketers of products, candidates, or social issues with little relevance for the consumer, a cosmetic variation strategy over multiple exposures seems more appropriate. For example, users of nondurable consumer goods often have a high level of repeat purchases without much thought given to subsequent buying decisions. For these products, the image created by peripheral cues in the ad or the mere recall of the brand and product from the advertising may be critical for attitudes.

Conversely, for products, candidates, and issues that command a high level of involvement and product relevance, and for which thoughtful elaboration of the arguments is likely, a substantive variation strategy may be more appropriate. Under these high product-relevance conditions, the need to define the target market accurately is necessitated. Defining the appropriate market segment helps ensure that the

product arguments are seen as strong and contribute to the purchase decision. For these involved, targeted consumers, a campaign employing substantive variation is expected to be more effective than one using cosmetic variation.

In sum, the repetition-variation hypotheses provide a framework to consider when media decisions are being contemplated involving repeated exposures of ads. Although our first test of the hypotheses appears promising, further testing should follow. The two studies presented here employed an audiovisual format. Tests of the model employing one format alone (e.g., print vs. radio) should be undertaken. Krugman (1965) suggested that television is a "low involvement" medium and that viewers tend to be passive processors. Further tests of the repetition-variation hypotheses may reveal that television is a more appropriate medium for cosmetic variation, whereas radio or print might hold more promise for substantive variation strategies. Regardless, the research and hypotheses presented here demonstrate that the specific type of ad variation employed over multiple exposures to ads is a potentially important factor that warrants more careful consideration from media planners and researchers.

[Received November 1988. Revised April 1990.]

REFERENCES

- Adams, H.F. (1916), *Advertising and Its Mental Laws*, New York: Macmillan.
- Appel, Valentine (1971), "On Advertising Wearout," *Journal of Advertising Research*, 11 (February), 11-13.
- Bogart, Leo (1984), *Strategy in Advertising: Matching Media and Messages to Markets and Motivations*, 2nd ed., Chicago: Crain.
- Burnkrant, Robert E. and Hanumantha R. Unnava (1987), "Effects of Variation in Message Execution on the Learning of Repeated Brand Information," in *Advances in Consumer Research*, Vol. 14, ed. Melanie Wallendorf and Paul F. Anderson, Provo, UT: Association for Consumer Research, 173-176.
- Cacioppo, John T. and Richard E. Petty (1979), "The Effects of Message Repetition and Position on Cognitive Response, Recall and Persuasion," *Journal of Personality and Social Psychology*, 37 (1), 97-109.
- Calder, Bobby J. and Brian Sternthal (1980), "Television Commercial Wearout: An Information Processing View," *Journal of Marketing Research*, 17 (May), 173-186.
- Craig, C. Samuel and Brian Sternthal (1986), *Repetition Effects over the Years: An Anthology of Classic Articles*, New York: Garland.
- Gorn, Gerald J. and Marvin E. Goldberg (1980), "Children's Response to Repetitive Television Commercials," *Journal of Consumer Research*, 6 (March), 421-424.
- Grass, Robert and Wallace H. Wallace (1969), "Satiation Effects of Television Commercials," *Journal of Advertising Research*, 9 (September), 3-8.

- Heeler, R. M. (1972), "Laboratory Investigation of Inter-related Effects of Mixed Insertions in Advertising Campaigns," unpublished dissertation, Business Administration Department, Stanford University, Stanford, CA 94305.
- Kardes, Frank R. (1988), "Spontaneous Inference Processes in Advertising: The Effects of Conclusion Omission and Involvement on Persuasion," *Journal of Consumer Research*, 15 (September), 225-233.
- Krugman, Herbert H. (1965), "The Impact of Television Advertising: Learning without Involvement," *Public Opinion Quarterly*, 29 (Fall), 349-356.
- Madigan, Stephen A. (1969), "Intraserial Repetition and Coding Process in Free Recall," *Journal of Verbal Learning and Verbal Behavior*, 8 (6), 828-835.
- McCullough, J. Lee and Thomas M. Ostrom (1974), "Repetition of Highly Similar Messages and Attitude Change," *Journal of Applied Psychology*, 59 (June), 395-397.
- Melton, Arthur W. (1967), "Repetition and Retrieval from Memory," *Science*, 158 (October 27), 532.
- Mitchell, Andrew A. and Jerry C. Olson (1981), "Are Product Attribute Beliefs the Only Mediator of Advertising Effects on Brand Attitude?" *Journal of Marketing Research*, 18 (August), 318-332.
- Moore, Danny L., Douglas Hausknecht, and Kanchana Thamodaran (1986), "Time Compression, Response Opportunity, and Persuasion," *Journal of Consumer Research*, 13 (September), 85-99.
- Pechmann, Cornelia and David W. Stewart (1989), "Advertising Repetition: A Critical Review of Wearin and Wearout," *Current Issues and Research in Advertising*, 11 (1-2), 285-330.
- Petty, Richard E. and John T. Cacioppo (1979), "Issue Involvement Can Increase or Decrease Persuasion by Enhancing Message Relevant Cognitive Responses," *Journal of Personality and Social Psychology*, 37 (10), 1915-1926.
- and John T. Cacioppo (1981), *Attitudes and Persuasion: Classic and Contemporary Approaches*, Dubuque, IA: Brown.
- and John T. Cacioppo (1984), "The Effects of Involvement on Responses to Argument Quantity and Quality: Central and Peripheral Routes to Persuasion," *Journal of Personality and Social Psychology*, 46 (1), 69-81.
- and John T. Cacioppo (1986), *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*, New York: Springer.
- , John T. Cacioppo, and David Schumann (1983), "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement," *Journal of Consumer Research*, 10 (September), 135-146.
- Poffenberger, Albert T. (1925), *Psychology in Advertising*, New York: Shaw.
- Sanbonmatsu, David M., Sharon Shavitt, and Steven J. Sherman (1990), "The Role of Personal Relevance in the Formation of Distinctiveness-based Illusory Correlations," *Personality and Social Psychology Bulletin*, in press.
- Sawyer, Alan (1981), "Repetition, Cognitive Responses, and Persuasion," in *Cognitive Responses in Persuasion*, eds. Richard E. Petty, Thomas M. Ostrom, and Timothy C. Brock, Hillsdale, IL: Erlbaum, 237-262.
- Yalch, Richard F. and Rebecca Elmore-Yalch (1984), "The Effect of Numbers on the Route to Persuasion," *Journal of Consumer Research*, 11 (June), 522-527.