

COMPARATIVE vs. CONVENTIONAL ADVERTISING:
A STUDY OF THE DIFFERENTIAL EFFECTS OF TWO
PROMOTIONAL STRATEGIES ON ATTITUDE AND PURCHASE

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ABSTRACT

This study measures comparative advertising effectiveness through the attitude construct of the Hierarchy-of-Effects model as was done by previous researchers; furthermore, it extends research by adopting a previously unexplored paradigm in conjunction with examining empirically the impact of comparative advertising on consumptive behavior. Results obtained indicate that inappropriate theoretical basis has likely been used in the past.

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INTRODUCTION

Current marketing research interest in comparative advertising seems to be focused on the relative effectiveness of comparative advertising versus conventional advertising promotional strategies (Scammon 1977). Comparative advertising which refers to a recent promotional practice, compares the sponsor's brand with one or more explicitly named brands of the same generic product or service category in terms of one or more specific characteristics, while conventional advertising presents the sponsor's brand without direct comparisons to other branded products or services of the same generic class (Wilkie and Farris 1975). Although the benefits and harms of comparative advertising have been widely debated (Tannenbaum and Kershaw 1976), little empirical evidence exists to either accept or reject its relative effectiveness (Mazis 1977).

With the advent of Wilkie and Farris' (1975) evaluation of comparative advertising effectiveness against concepts drawn from the behavioral sciences, a number of experimental explorations have been conducted. For the most part, however, these studies have failed to produce any significant evidence pertaining to the impact of comparative advertising on consumer attitude (brand preference) and behavior (purchase) (Barry and Tremblay 1975). So far these studies have focused exclusively on the communication effectiveness by measuring brand preference and intentions to buy through the attitude construct based on the Hierarchy-of-Effects model whose underlying premise is

that awareness precedes attitude, and attitude precedes purchase (Ginter and Starling 1977). Based on this theoretical model, conclusions have been drawn that comparative advertising is not any more effective than its counterpart promotional strategy (Golden 1975; Ogilvy and Mather Research 1975; Wilson 1976). Still, there remains among students of marketing the doubt whether attitude is reflective of behavior (purchase) in the marketplace.

The purpose of this paper is first to discuss that past laboratory experiments have attempted to measure the effectiveness of comparative advertising under certain questionable assumptions; secondly, to present an alternative theoretical framework for measuring effectiveness; and, finally, to report the results of a study conducted to measure effectiveness through both the attitude construct and an alternative paradigm.

THEORETICAL ASSUMPTIONS OF PAST STUDIES

Past laboratory experiments such as Wilson's (1976), Golden's (1975), and Ogilvey and Mather's (1975) have attempted to measure the effectiveness of comparative advertising under certain common explicit or implicit assumptions. The most notable assumptions pertain to (1) the evaluation of comparative advertising through the attitude construct (Scammon 1977, p. 1), (2) the assumption that intention to buy is predictor of consumer's overt behavior, and (3) the assumption that the Hierarchy of Effects should be used as theoretical basis in conjunction with low involvement products, as their studies show. The discussion of these assumptions will indicate that the impact of comparative advertising so far has only partially, if not inadequately, been assessed by previous studies.

The first assumption pertains to the notion that the consumer moves sequentially through the attitude construct to behavior. In studying the impact

of comparative advertising, researchers have followed the traditional Hierarchy-of-Effects models and thus assumed that the consumer operates through the attitude construct. The Hierarchy-of-Effects models in the advertising process are based on the premise that the primary objective of advertising is to change first attitude and then behavior of selected groups of consumers by proposing that behavioral changes occur by means of moving the consumers through a sequence of steps (Lavidge and Steiner 1961; Colley 1961; Strong 1972). The varying characteristics of these models are in the number of stages in the sequence. However, all have basically three stages in common: (1) awareness (2) Attitude change (3) purchase (Rothschild 1977, p. 3). It is usually hypothesized that these stages of the hierarchy are linked together in a causative chain through which advertising produces a change in the consumer's attitude toward the product; this in turn induces a purchase response.

However, there is a great deal of evidence that consumers do not always go through the traditional order of stages (Lessig and Anderson 1976). The Hierarchy of Effects has been criticized by some researchers mainly on the grounds that the progression is not necessarily a one-way sequence from awareness to purchase, and that not all individuals will proceed through each step in the hierarchy (Robertson 1976). Palda (1966), in particular, maintains that all the steps between initial awareness and final purchase need not always occur, and that, if they do, they need not occur in the same order. Concurrent findings also emerged from an empirical study by Aaker and Day (1971) which lent support to Palda's foregoing contention.

By assuming that the attitude construct has the explanatory power, the previous studies on comparative advertising have possibly misevaluated the true effectiveness of this promotional strategy.

The second assumption of previous studies concerns the acceptance of attitude as predictor of behavior. It has long been assumed in researching the effectiveness of comparative vs. conventional ads that a change in attitude will result in a change in behavior. For example, in Golden's (1975) study respondents were asked whether they would purchase the brand advertised through comparative advertising or the competing brand; since no significant difference was found between their intentions to buy both brands, it was concluded that the effectiveness of comparative advertising has no more impact on purchase intentions than that of conventional advertising. "The assumption is made that the stronger the emotion (attitude), negative or positive, the greater the action-tendency involved and the greater the predisposition to buy the product --an assumption as yet unproven," cautions Kassarian (1977, p. 4).

An overview of research based on Fishbein's models on consumer products does show acceptably high correlations between attitudes and behavioral intentions (intentions to buy). However, the correlations between behavioral intentions and overt behavior remain not only poor but generally lower than those obtained in social psychological studies (Ryan and Bonfield 1975). Also, there is a considerable body of evidence which indicates that attitudes and behavior are very weakly related (Day 1973; Festinger 1964). After reviewing 32 studies on the attitude-behavior relationship, Wicker (1969) concluded that it would be considerably more likely to accept the hypothesis that attitude is unrelated or only slightly related to overt behavior than that attitude is closely related to action. Fishbein provides further negative evidence that attitude and behavior are related, or that attitude is a predictor of behavior, by stating that if there is any relationship at all between the two variables, supporting evidence comes from studies showing that an individual tends to bring his or her attitude into line with his or her behavior rather than from

studies demonstrating that behavior is a function of attitude (Fishbein 1967). Additional support has also been acquired from both social psychological and marketing studies that unidimensional, affect-type models are poor predictors of subsequent behavior (Noström 1970).

Since the relationship between attitude, intentions, and purchase (behavior) is tenuous (Fishbein and Aizen 23), the communication-effect research results may have not adequately determined the efficacy of comparative advertising.

The appropriateness of the Hierarchy of Effects as a theoretical basis for measuring effectiveness is the third questionable assumption. Since the previous studies on comparative vs. conventional advertising used low involving products like deodorant (Golden 1975) and detergent (Ogilvey and Mather 1976), the adoption of the Hierarchy of Effects as a theoretical basis was inconsistent (DeBruicker 1977, p. 1). Recent research findings indicate that the ability of advertising to influence movement through the hierarchy will depend upon the many variables, including the appeals, the economic risk involved in purchasing the product (Hornik 1976). One such study concluded that Hierarchy of Effects is appropriate for high involvement, high commitment products in which case the consumer moves through the attitude construct to behavior response (Bearden 1977, p. 1).

Since virtually all studies on comparative vs. conventional advertising used low involvement products (Mazis 1977), they failed to employ the correct theoretical basis for interpretation and gathering of data on the right variable, namely, consumer purchases in the marketplace. Results from one study supported the hypothesis that one attitude model cannot be formulated and applied universally to all consumers under all conditions (Lessig and Anderson 1976). Instead of tapping the attitude of the consumer, sales volume should

have been measured since the previous studies used low involving products. In this regard, some marketing researchers have voiced regrets to the effect that in lieu of using the most parsimonious explanation such as discrimination, shaping behavior, and reward, consumer researchers in marketing have turned to intervening variables and hypothetical constructs such as attitudes and personality for prediction and then have applied these same tools to the study of low involving products (Kassarjian and Kassarjian 1977, p. 15).

As was mentioned earlier, the sequential assumption of the Hierarchy of Effects has been questioned in the past, but recently research evidence supports this doubt, especially for low involving purchases such as buying of most convenience goods for they involve low-risk decisions (consumers know that they are not risking, for instance, too much money). Low involvement purchase has been defined as the purchase of convenience goods under such conditions as low product cost, low importance of the product to the consumer, low interest due to some previous experience with the product category, limited number of distinguishing attributes among alternative brands, and low levels of salience attached to the attributes of the product considered by the consumer (Ray 1974; Robertson 1976). Bearden and his associates (1977, p. 2) reported recently at an AMA attitude conference that "the traditional idea that attitudes change before behavior occurs is valid in high involvement buying situations, but not in low involvement ones." They further stated that findings from their studies had supported the existence of low involvement purchase situations in which behavior may precede affect (Bearden et al. 1977, p. 1); these researchers did not, however, present an explanation for the consumers movement from awareness directly to behavior, except that the purchase situation involved an economically low-risk product.

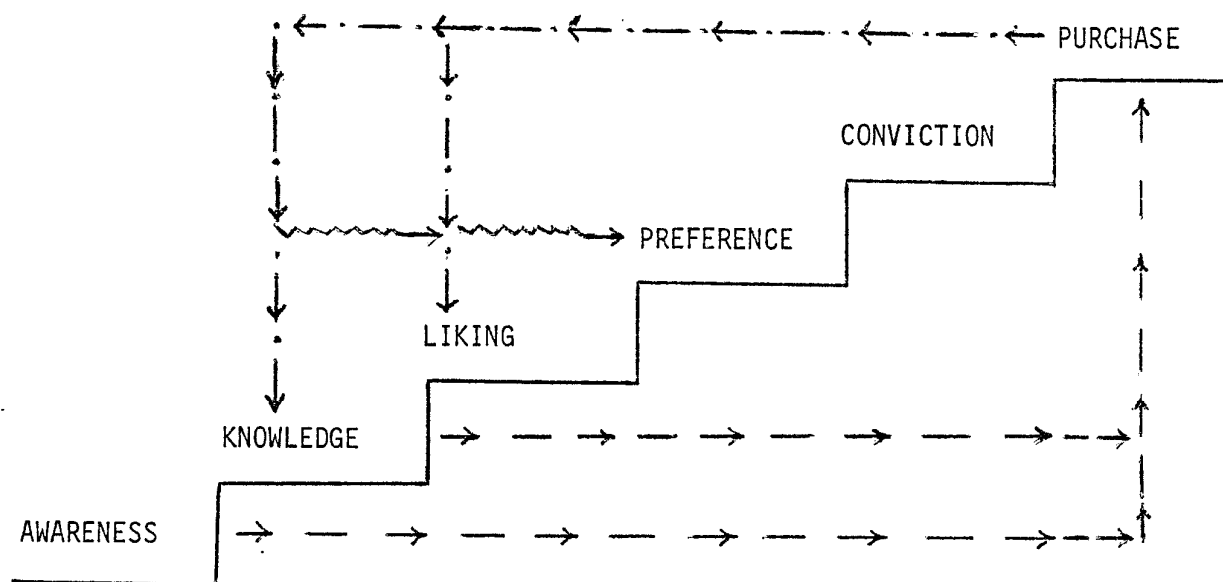
Krugman (1977), however, examined the results of recent experiments in brain physiology, and stated that under conditions of low involvement the left hemisphere of the brain functions; while under conditions of high involvement, the right hemisphere functions. He, therefore, concluded that in a low involvement situation one might look for gradual shifts in perceptual structure where awareness and minimal comprehension occur, followed by trial and then attitude change, in that order. Based on Krugman's (1965) theoretical work, Ray and his colleagues (1973) proposed the Low Involvement Hierarchy in which behavior precedes attitude; this model stands in contrast to the traditional Hierarchy-of-Effects model in which attitude precedes behavior. Research findings of Rothschild (1973) and others indicate that the Low Involvement theory is more appropriate to measure the effectiveness of advertising for low involving purchase situations. However, this concept has not yet been put to empirical test in conjunction with comparative advertising.

PURCHASE PRIORITY MODEL OF EFFECTS

As an alternative model to measure the effectiveness of comparative advertising, a "purchase priority" model is proposed in terms of the Hierarchy-of-Effects model (Lavidge and Steiner 1961) and Low Involvement theory (Ray 1973) as shown in Figure 1. Comparative advertising may first make the consumer "aware" of the advertised brand, then provide the consumer with some "knowledge" that the brand is superior in one or more aspects over its named competitors. Before the consumer is "liking" or forming a "preference" for the advertised brand, s/he may "purchase" it in the event the item is a low involving product. In case that the consumer is satisfied with the purchase, "liking" takes place which influences the consumer to form a "preference" for it. Finally, a favorable attitude is formed. Thus, behavior influences the affective component of

FIGURE 1

PURCHASE PRIORITY MODEL OF EFFECTS: WHEN THE CONSUMER SKIPS SOME SEQUENTIAL STAGES IN THE DECISION PROCESS IN A LOW INVOLVING PURCHASE SITUATION



Legend:

- → — → Skipping sequential stages from "awareness" and/or "knowledge" to "purchase" stage.
- · — · → Feedback from purchase experience to "knowledge" and/or "liking".
- · — · → "Knowledge" and/or "liking," in turn, forms, reinforces, or changes "preference" toward the purchased brand.

the consumer's psyche, recursively (Aaker and Day 1971; Raymond 1965). If one dips into his or her experience, one finds numerous instances where s/he engaged in an activity just for the sake of "I'll try and see how it is," provided the attendant risk is low.

In conclusion, communication-effect research, which endeavors to discover whether comparative advertising is achieving the intended communication effects, indicates that comparative advertising is not any more effective than its

counterpart. In terms of the theoretical framework (Hierarchy of Effects), only the affective component has been measured (Ginter and Starling 1977) and not the behavioral part of the model. While communication-effect advertising research helps advertisers to improve the quality of message, content, and presentation, it reveals very little about how much sales may be generated by it (Kotler 1976, p. 370). Undoubtedly, the marketing strategist is equally, if not more, concerned to know which strategy yields higher return (sales) on his/her promotional effort.

The "purchase priority model" (Figure 1) necessitates research to evaluate comparative advertising by first measuring behavior (purchase) and then attitude. The description of the study will be explored in the next section in an attempt to fill an important research gap on comparative advertising effectiveness.

THE STUDY

To measure both attitude and purchase by means of the Hierarchy-of-Effects model and the "purchase priority" model, this study was undertaken in two phases: in Phase I, this study followed the same theoretical assumption as used by previous studies in evaluating the differential effects of comparative versus conventional advertising strategies through the attitude construct; in Phase II, this study attempted to determine the differential effects through the overt behavior (purchase) under the assumption of the "purchase priority" model. The rationale for studying Phase I and II was to see if by adopting an appropriate theoretical basis, the efficacy of comparative advertising would be found to be different than the negative conclusions drawn by earlier researchers. Thus, this study explored both the attitude and purchase dimensions of comparative advertising.

Attitude and Purchase Dimensions

When measuring comparative advertising effectiveness, only the attitudes and/or intentions to buy were measured by previous researchers. The results of measuring attitudes were low as is shown in Table 1. In Phase I, this study sought to confirm that attitudes would be low for, as found in the past studies, the products used were low involving. The consumer tends not to get involved with an unimportant, nonego-involving product; therefore, his or her beliefs and preferences are not strongly held (Hupfer and Gardner 1971). The researchers in past studies have also implied from their low attitude results that actual purchase is low as indicated in Table 1.

Although this study agreed that attitudes are probably low in the light of low involving products, the contention here was that purchase may be high in spite of the fact that attitudes are low as is illustrated in Table 1. Notwithstanding the consumer's lack of strong beliefs about attributes under low involvement, s/he still makes purchases and consumes products (Calder 1977, p. 10; Wright 1973). In low involving situations the consumer may move directly from awareness to purchase for many reasons, some of them being novelty of the item, curiosity about it, new information, cost, etc. (Robertson 1976).

Since the actual purchases have never been measured before, this study attempted to determine sales effectiveness of comparative advertising also in Phase I. Purchases were predicted to be relatively high as a result of a comparative advertisement because information about discriminating attributes that a comparative ad may give is more important than the consumer's preference to the competing product. (Chaffee and Tipton 1969). Certain of these intrinsic characteristics of comparative advertising will be discussed in the next section. Finally, in Phase I, postpurchase attitudes were taken into consideration, and the contention here was that under comparative advertising format

TABLE 1

COMPARATIVE VS. CONVENTIONAL ADVERTISING EFFECTIVENESS RESULTS OBTAINED AND RESULTS PREDICTED UNDER THE ASSUMPTIONS OF HIERARCHY-OF-EFFECTS AND "PURCHASE-PRIORITY" EFFECTS MODELS

Type of Model	Promotional Strategy	Effects on Consumers		
		Prepurchase Attitude	Purchase	Postpurchase Attitude
Hierarchy of Effects: Relative Results Obtained	Comparative	Low	Not Measured (Implied Low)	Not Measured
	Conventional	Low	Not Measured (Implied Low)	Not Measured
Hierarchy of Effects: Relative Results Predicted	Comparative	Low	High	High
	Conventional	Low	Low	Low
Purchase Priority Effects: Relative Results Predicted	Comparative		High	High
	Conventional		Low	Low

postpurchase attitudes would be high compared to conventional strategy results, since the consumer forms or changes attitude after having had the opportunity to interact with a low involving product.

In Phase II, this study attempted to measure the effectiveness of comparative vs. conventional advertising also by means of the "purchase priority" model. Thus the actual purchases were measured before inquiring into attitudes. Even though

the past studies through the Hierarchy of Effects indicate low purchase intentions, the contention was that purchases would be high, and that postpurchase attitudes under comparative advertising would also be high compared to pre-purchase attitudes measured in Phase I as is summed in Table 1. All of the foregoing predictions were subsumed under three testable hypotheses.

Hypotheses

H₁: Before purchase of a low involving product, there will be no significant difference in attitude toward the brand advertised through either a comparative or conventional advertising strategy.

The rationale for H₁ has already been explained in the preceding pages by the Low Involvement theory (Krugman 1965; Ray 1973; Krugman 1977).

H₂: After purchase of a low involving product, attitude toward the sponsor's brand (brand preference) is higher when the item is presented through a comparative advertising strategy providing objective information than through a conventional strategy.

H₃: Purchase rate of a low involving product will be higher through a comparative advertising strategy providing objective information than through a conventional advertising strategy before and after the consumer's attitude is measured.

Objective information refers to factual information that would appeal to the consumer's rational buying motives such as quality, durability, and price. The differential effects of comparative advertising predicted in H₂ and H₃ can be supported from behavioral science research findings and from the performance reports of this promotional strategy from the marketplace. Insights

gathered from behavioral science research indicate that comparative ads have differential effects than obtained from conventional advertisements (Wilkie and Farris 1975). While the bulk of behavioral research has been focused on the cognitive consistency-seeking behavior of the individual, recently the pendulum has swung towards complexity-seeking behavior (McGuire 1966).

Of the complexity theories which has been concerned with finding explanation for novelty or complexity seeking, Berlyne's (1960) "collative approach" supports strongly comparative advertising superiority. For novelty-seeking behavior to take place, the individual has to be aroused, "awakened" or "alerted". Since we are not dealing with any stimulus, but with novel or discriminating stimuli, Berlyne (1960) identifies some of the important and outstanding attributes of the stimulus pattern. These properties are called "collative properties" which include novelty, surprisingness, change, ambiguity, incongruity, blurredness, and power to induce uncertainty (Berlyne 1963, p. 290-91). These are called collative properties for they depend on collation with others, present and past. The implication is that such properties give the external stimulus (e.g., a comparative ad message) the power to induce and increase arousal. Overt behavior accompanies arousal usually. DeBruicker (1977, p. 8) maintains that ". . . in order for the tenets of low involvement information processing theories to hold . . . intervening variables such as perceived product differentiation may be important." By means of comparing the sponsor's brand with that of a competitor's, comparative advertising seems better suited in helping the consumer perceive product differences, and thus arouse the consumer's need for novelty, change, etc.

In an experiment, Maddi (1968) concluded that intermediate degrees of novelty were very effective in eliciting choice or investigatory responses. For Maddi (1968) the motivational significance of novelty seeking lies in the need

for variation. The individual's need for variation results in exploratory responses such as in interacting with the product. Dimensions of novelty in the consumer context would be new products, new advertising (appeals, medium, etc.), and new promotional devices such as familiar products in unfamiliar surroundings can be viewed as new stimuli. Thus, the need for variation may also help account for the superiority of comparative advertising through which the sponsor's brand is differentiated.

Copley and Callom (1971) supported Berlyne's (1963) theory of "collative properties" in the context of buying behavior. Supportive results were also found by Cox (1967) and Haines (1966) in brand switching behavior. Need for variation, novelty seeking, etc. in consumer behavior can well be expected to relate to exposure, awareness, interest in a new stimulus (new product, new ad, etc.) (Maloney 1962). The next step in the progression might be that "the novel stimulus is chosen or preferred to the more familiar one by the consumer." (Venkatesan 1973, p. 374).

Usually a comparative ad capitalizes on a discriminating attribute (Brand A excels in attribute; over Brand B); the principle of the discriminating attribute is a cognitive concept proposed by Chaffee and Tipton (1969). In an experimental decision situation, consumers expressed a strong preference for additional information concerning those attributes on which the alternative choices differed (Chaffee and Tipton 1969). Information preference also favored attributes on which the alternatives could be compared. Information-seeking indices for discriminating attributes (those attributes on which alternatives differed or might differ) were considerably higher than similar measures of information seeking about the alternatives themselves. Such a finding indicates that it is the attribute, not the brands, that is the central factor in decisional information processing.

By its nature, comparative advertising contains some "novelty" and "contrast" elements (Wilkie and Farris 1975), and as it usually capitalizes on a discriminating attribute (Chaffee and Tipton 1969), it serves to increase attention levels of the audience. The consumer thus becomes aware of a stimulus which arouses his or her curiosity to explore for himself or herself and find out about the advertised product either by seeking more information or by outright purchase of the product in a low involving purchase situation. Furthermore, if the discriminating attribute(s) are real or live up to the consumer's expectation, s/he tends to form a positive postpurchase attitude toward the product.

Ample evidence is also available from the marketplace reports which show that comparative advertising has an edge over conventional advertising. Reports from the marketplace, on the one hand, claim that comparative advertising is relatively more effective (Chevins 1975; Tannenbaum 1976); comparative advertising research studies, on the other hand, indicate just the opposite (Giges 1976). Therefore, there is a discrepancy between what the studies have concluded on its effectiveness and what may actually take place at the marketplace (Barry and Tremblay 1975, p. 19).

Citing success stories from the marketplace, one observer commented that ". . . for products whose claims are based on facts, 'brand X' seems to have disappeared from the advertiser's vocabulary" (Ainsworth 1974, p. 267). An estimate was reported as far back as 1976 indicating that one out of 12 television commercials shown on the air during prime-time viewing hours was a comparative advertisement (Hickey 1976, p. 45).

In addition to the preceding theoretical and empirical studies, such field reports provide extra support for the conjecture that comparative advertising has favorable differential effects. To test the three hypotheses listed

earlier, an appropriate research design and procedures were adopted in order to minimize threats to internal validity without sacrificing too much external validity of the findings.

METHOD

General Research Design

To examine the effects of comparative vs. conventional advertising on attitude, purchase, and postpurchase attitude, this study made use of a combination of time-series and cross-sectional designs. A time-series design enabled the researcher to obtain data from the same sample for successive points in time (Green and Tull 1975, p. 83). Such a design was required under the tenets of the "purchase priority" model in order to make observations over time on the attitude dimension of this study.

All previous studies on comparative advertising have only employed cross-sectional design, but to assess attitudinal shifts, there was a definite need to evaluate the impact of various treatments over time (Mazis 1977, p. 29; Sawyer 1976). Since more than one group of subjects were used in this study, combining cross-sectional design with time series made it possible to measure comparative advertising impact on one group versus conventional advertising impact on another group at the same point in time, after the groups have been exposed to experimental comparative and conventional advertisements, respectively. This study consisted of two major phases; altogether four experimental groups were used to measure both the attitude and purchase dimensions of the study.

Experimental Design

Most studies on comparative advertising dealt with attitude change, and therefore, before-and-after experimental designs were employed. Since this

study focused on attitude after treatment, purchase behavior, and postpurchase attitude, a before-and-after design was deemed unnecessary for the following reasons: first, it has a major weakness which is in testing effect (Cox and Enis 1972, p. 312). Additionally, after-only with control design eliminates interaction effect between pretesting and experimental variable which sensitizes the subjects to the issues involved in the experiment (Joselyn 1977, p. 75).

Secondly, in the after-only with control design, the difference between alternative experimental treatments is measured, not the change in responses between individuals exposed to the experimental variable (Joselyn 1977, p. 76). As such, this study did not primarily involve change in preexisting attitudes which usually requires pretest results to compare them with post test results. Thus, measurement relative to the ads was avoided before exposure so that respondents would not be sensitized to the purpose of the research as Ray and his associates (1973, p. 156) did in testing communication effectiveness and Low Involvement theory. Besides, when product or promotional strategy preferences are measured before exposure, respondents may be committed to their initial evaluation and thus produce a bias in the internal validity of the study.

The after-only with control design was most suitable for the present study. The use of the control group would alleviate the problem of brand loyalty (Campbell and Stanley 1966, p. 12). Thus promotional tools can be effectively tested with this design (Boyd and Westfall 1972, p. 95-97). To control the brand loyal covariate, the procedure followed was randomization. In this way, an attempt was made to achieve pre-experimental equation of groups in order to avoid spurious differences in the experimental subjects (Hays 1963, p. 449).

As the purpose of this experiment was to measure the differential effects of two types of advertising strategies on subjects' attitude, purchase, and postpurchase attitude, two different categories of ads were presented to the subjects: a comparative ad and a conventional ad. These ads were based on actual advertisements about two almost identical ball point pens, namely Scripto and Paper Mate, providing objective information concerning selected attributes of the products (such as carbide point vs. nylon point, price, writing performance --skips or does not skip, lasting of supply of ink). Since these independent variables were manipulated on the subjects, and as long as the subjects were randomly assigned for each treatment, this study met the major requirements of a true experimental design (Bush et al. 1975, p. 19).

Sample Size

A sample of 273 undergraduate marketing students was selected from marketing classes. A probability sample was not deemed necessary for the purpose of this explanatory study since the major objective here was to distinguish between treatment effects on randomly assigned subjects (Edgington 1966, pp. 485-487), while in inferential studies the main concern is with generalizing the finding to a population based on a probability sample (Bush et al. 1966, p. 18). The selected sample was divided randomly into four groups. Two groups were assigned to Phase I of the study; and the remaining two groups, to Phase II of the study.

Experimental Setting

Part of the experiment was conducted in the classroom and another part in the marketplace in order to control for internal validity in the controlled setting and also gain external validity from the natural setting of the marketplace. As the aim of the study was to measure the relative efficacy of alternative promotional strategies, the classroom was a good place to insure equal

conditions to avoid favoring one alternative over the other. In other words, treatments were administered under the same conditions which are usually better controlled in an experimental setting. Increasing numbers of experiments confirm that buyer behavior under semi-artificial conditions resembles that in real life (Charlton and Ehrenberg 1976, 1973; Charlton and Pymont 1972).

The laboratory part of the experiment consisted of exposing the experimental groups to a portfolio of ads in a classroom at a university. After reading a cover story designed to disguise the nature and the purpose of the study and also after reading the ads, the subjects were asked to evaluate statements on the cover story in which there were also imbedded attitudinal questions regarding the experimental products. Then each subject was given a coupon for redemption at a 40 per cent discount of the retail price toward the purchase of one of the two experimental products, either Scripto or Paper Mate ball-point pens. Each brand of pen happened to be identically priced at 98 cents.

As for the real world setting part of the experiment, the subjects were told to go to the university bookstore and redeem the given coupons there. The experimental pens were displayed in separate boxes at the pen counter of the store.

Although the first setting for the experiment was called laboratory, in fact the classroom is real and not simulated except for the fact that students do not normally go there to read advertisements. Therefore, to hedge against possible reactive arrangement due to somewhat artificial setting which would bias results (Campbell and Stanley 1966, p. 20), a cover story was used under the pretext of asking the subjects to participate in a study to determine the feasibility of direct marketing of school supplies to college students. The inclusion of the experimental and filler ads was explained to the subjects by stating that the companies interested in the study of direct marketing to

college students wished to compensate the participants of the study for their time and suggestions; since the companies offered a number of competing products, ads were included to provide the participants with information for correct product selection.

Procedure

Out of 135 students assigned randomly to Phase I of the study, 70 subjects were given, still randomly, a portfolio of ads containing one comparative ad favoring Scripto, one conventional ad favoring Paper Mate, and two filler ads about two kinds of dictionaries. Thus, the 70 subjects constituted the comparative treatment group. Preceding the ads in the portfolio, there was one page of cover story entitled "Direct Marketing to College Students." After having discussed the cover story and the subjects have had a chance to read the ads, a questionnaire was administered to measure the subjects' opinions on the cover story and also to measure their prepurchase attitudes toward the brands appearing in the portfolio ads. Then coupons were distributed.

Of the 135 students assigned to Phase I, 65 subjects were given, again randomly, a portfolio of ads consisting of the same conventional ad favoring Paper Mate, the same two filler ads, the same cover story, and instead of a comparative ad, a conventional ad was included favoring Scripto. After having read the cover story, the same attitudinal questionnaires were administered. Then coupons were distributed. Thus each group was exposed to four ads. The reason for the same number of ads was to make the experimental conditions equal for both groups of subjects (Banks 1967, p. 90), and vary only in terms of the comparative ad treatment.

In Phase II, out of 138 students, 72 subjects were treated to the same ads and cover story as was used for group one in Phase I of the study. The only

difference was in the last part of the experiment: prepurchase attitudinal questionnaires were not administered to the subjects, instead coupons were given right after exposure to the ads. Finally, of the 138 students assigned to Phase II, 66 subjects were exposed to the same ads and cover story as used for group two in Phase I of the study. Again, the only difference was in not measuring the attitudes of the subjects immediately after exposure to the ads; instead, coupons were given.

The two groups in Phase II had their attitudes measured after ten days time span. These two groups had a chance to use the purchased pens and out of this interaction it was anticipated that the subjects had some time to form postpurchase attitudes toward the experimental products. It should be pointed out that the postpurchase attitudes of the two groups in Phase I were also scaled after the same period of time allotted to Phase II groups.

Instrument

To collect data on the purchase variable, coupon redemptions were noted for each brand. The effectiveness of the sales promotion tool in terms of coupon incentives for securing immediate trial purchasing has long been recognized in marketing. The coupon was good for redemption of either Scripto or Paper Mate pens. To eliminate any possible order effect, half of the coupons were printed with Scripto first and then Paper Mate, and the other half was printed vice versa.

To render the coupons redeemable only by the subjects, each subject was asked to write his or her name on the coupon and the clerks at the counter were instructed to verify the name appearing on the coupon against the student's ID so as to avoid collecting biased data. Moreover, the clerks at the checkout counter were instructed to circle on the coupon the purchased brand. Such a

procedure made it possible to keep track of the experimental subject's purchased brand of pen.

As for the other dependent variables, prepurchase attitude and postpurchase attitude data were collected on a seven-point scale since the alternative advertising strategy effectiveness pertains to product related effects (impact of different message formats on product liking, intentions to buy, or purchase). A seven-point horizontal scale was deemed appropriate for measuring product preference levels (Abrams 1966, pp. 189-193).

For each of these dependent variables, the respondent was asked one question regarding his/her preference of brands. The procedure was to have the respondent convey his/her preference on a given topic by indicating one of seven positions on a scale of bipolar adjectives. These adjectives and antonyms, the extremes of each pair, were separated by seven (assumed) equal intervals. For example, for brand preference a pair of adjectives "definitely dislike" and "definitely like" was presented. The respondent was asked to rate each brand along a given scale as follows:

Definitely Dislike	Dislike	Slightly Dislike	Neutral	Slightly Like	Like	Definitely Like
-3	-2	-1	0	+1	+2	+3

A numerical value was assigned to each position on the scale. Such a numerical assignment made possible the calculation of means. Thus, the "average response" of the subjects could be found.

As for the postpurchase attitude measurement, again the foregoing 7-point scale was used. To evaluate the pens redeemed with the coupon, the subjects of the four experimental groups in Phases I and II were instructed first to check one of three boxes which were designated Scripto, Paper Mate, or Neither (in the

event the subject did not redeem his/her coupon). It should be mentioned that at every opportunity, due care was taken to avoid order effect (reversing brand names, scale values, etc.) so that the results of this study, which are presented next, are mitigated from measurement bias.

RESULTS

Attitude Dimension

In Phase I, 135 subjects participated in the experiment. However, the data on prepurchase attitude toward the experimental products, Scripto and Paper Mate, came from 89 subjects who purchased either Scripto or Paper Mate. The remaining subjects' prepurchase attitude was not included since one of the objectives of the study was to determine if there was any difference in attitude after purchase. Thus, since each respondent was asked to evaluate both Scripto and Paper Mate, a total of 178 observations were collected ($89 \times 2 = 178$). The number of observations by treatment and by pen are unequal due to unequal groups of subjects used for each treatment.

The mean ratings of respondents by treatment and by pen were calculated from the raw scores obtained from a 7-point scale, +3 being the highest (positive) and -3 being the lowest (negative). The mean scores calculated for the comparative and conventional treatment groups toward the experimental products are presented in Table 2.

As for the Phase I postpurchase attitude of the respondents who purchased either Scripto or Paper Mate, the total number of observations is only 89 since each subject was instructed to evaluate only the brand of pen s/he purchased. The mean scores of the ratings of the two experimental products both under comparative and conventional treatments appear also in Table 2.

TABLE 2
 MEAN PREPURCHASE AND POSTPURCHASE RATINGS OBTAINED ON PEN
 BY TYPE OF TREATMENT IN PHASES I AND II

Phase	Variable	Treatment	Pen	Attitude Mean
I	Prepurchase Attitude	Comparative	Scripto	1.1296
		Comparative	Paper Mate	0.9630
		Conventional	Scripto	1.2500
		Conventional	Paper Mate	1.3883
I	Postpurchase Attitude	Comparative	Scripto	2.2162
		Comparative	Paper Mate	0.7059
		Conventional	Scripto	2.0833
		Conventional	Paper Mate	1.9583
II	Postpurchase Attitude	Comparative	Scripto	2.2553
		Comparative	Paper Mate	0.8750
		Conventional	Scripto	1.2857
		Conventional	Paper Mate	1.3750

In Phase II, 138 subjects participated in the experiment, but only 85 subjects purchased either Scripto or Paper Mate. Thus a total of 85 observations were tabulated. To follow the basic assumption of the "purchase priority" model, only postpurchase attitude of the respondents were scaled. It should be noted again that the postpurchase attitudes of the subjects who actually purchased either brand were included. Table 2 presents the mean rating scores obtained for the comparative and conventional treatment groups toward the two experimental products.

Analysis of variance was applied to the data on the attitude dimension of the study. This technique is considered useful in experimental designs where the researcher needs to control certain variables of interest (predictors) and measure their influence on some response (criterion) variable (Green and Tull 1975, p. 329). The purpose here was to analyze the variance between treatments and the comparisons of mean attitudes toward the pens. In this study, the two predictor variables are the two types of promotional strategies which are nominally scaled, and the criterion variables are the attitudinal response scores which are intervally scaled. The model used is analysis of variance with groups of unequal sizes. Since treatment groups were unequal in number, the analysis of variance was handled by the general linear regression with least-squares technique (Harvey 1960).

The computational results obtained on the data by means of ANOVA are presented in Table 3. Analysis of the data indicates that there is no statistical difference between treatments, namely comparative treatment has no greater effect on the subjects' attitude than conventional treatment. Furthermore, prepurchase attitude toward Scripto and Paper Mate is not significant at .05 level. Also, the analysis indicates that there is no significant interaction effect between treatments by pen.

The mean attitudinal ratings obtained on type of treatment by pen in Table 2. Since the attitude measurements were collected from a 7-point scale ranging from highest positive rating of 3 and lowest negative rating of -3, any mean rating between +1 to -1 could be considered neutral or very low. The computed F Value of 0.00781 (1, 86 d.f., $p < .05$) is not significant in determining that there is attitudinal difference toward either pen. Therefore, H_1 is supported by the data. That is, before purchase of a low involving product, there is no significant difference in attitude toward the brand advertised through either

TABLE 3

ANOVA OF PREPURCHASE AND POSTPURCHASE ATTITUDE IN PHASE I

Source	d.f.	Mean Square	F Value
<u>a. Prepurchase Attitude, Phase I</u>			
Treatment	1	1.5147	1.0326
Error _a	59	1.4669	
Pen	1	0.0083	0.00781
Treatment x Pen	1	1.0083	0.94548
Error _b	117	1.0660	
<u>b. Postpurchase Attitude, Phase I</u>			
Treatment	1	4.4957	2.509
Pen	1	0.00001	0.000005
Treatment x Pen	1	.16.3374	9.117**
Error	86	154.08	

$p < .0033$

a comparative or a conventional promotional strategy.

As for the postpurchase attitude of subjects in Phase I, analysis of the data (Table 3b.) indicates that there is no significant difference between the treatments at .05 level. The treatment effect has an F Value of 2.509, (1, 86 d.f., $p > .117$). Attitudes between the brands of pen are also insignificant. However,

the analysis shows that there is a significant treatment by pen interaction with an $F(9.117, 1, 86 \text{ d.f.}), p < .0033$.

Review of the mean ratings obtained from the postpurchase attitude toward the pens purchased indicates that comparative treatment has greater effect on Scripto than conventional treatment has on either Scripto or Paper Mate as is shown in Table 2. The mean rating for the comparative group is 2.2162 toward Scripto, while in the conventional group the mean rating is 2.0833. Although the difference seems to be small, it was statistically found significant --the F Value obtained for treatment by pen is 9.117, with 1 and 86 d.f., $p < F 0.0033$. It should also be noted that the mean rating for the comparative group is 0.7059 toward Paper Mate, whereas in the conventional group the mean rating is 1.9583. The fact that Paper Mate received a lower rating by the comparative group than by the conventional group lends additional support that the presence of the comparative ad favoring Scripto must have significantly affected Paper Mate's position. In other words, Paper Mate was overshadowed by Scripto's comparative ad. Thus, H_2 is supported by the data obtained in Phase I that after purchase of a low involving product, attitude toward the sponsor's brand (brand preference) is higher when the item is presented through a comparative advertising strategy than through a conventional strategy.

The analysis of variance technique with experimental groups of unequal sizes was also applied to the postpurchase attitude scores obtained in Phase II. The results are reported in Table 4. The computed F Value of 0.0047 (1 d.f., $p > F 0.9454$) indicates that there is no significant difference between comparative and conventional treatments on the subjects' postpurchase attitude toward the pen purchased in the study. The analysis further discloses that the interaction effect between Phase I and Phase II, type of treatments are insignificant; so is the interaction effect between type of treatment by pen, and phase by pen.

TABLE 4
ANOVA OF PREPURCHASE ATTITUDE IN PHASE I AND POSTPURCHASE
ATTITUDE IN PHASE II

Source	d.f.	Mean Square	F Value
Phase	1	0.2291	0.165
Treatment	1	0.0049	0.0047
Phase x Treatment	1	1.8596	1.3442
Pen	1	5.1540	3.7256
Treatment x Pen	1	2.4178	1.7478
Phase x Pen	1	2.0234	1.4627
Phase x Treatment x Pen	1	1.8037	1.3038
Error	167	1.3834	

The difference between prepurchase attitudes in Phase I and the postpurchase attitudes in Phase II under both types of treatments are also found to be statistically insignificant. However, there is a difference in attitude toward the two types of pens purchased with an F Value of 3.7256 (1 d.f.) but at a low level significance of .055. This points to the phenomenon that there seems to be a trend of higher means obtained on comparative treatment by Scripto pen in both Phases I and II as can be detected in Table 2. By observing the trend of means in Table 2, we can see that prepurchase mean toward Scripto by

comparative treatment is 1.1296 in Phase I; then it moved to a higher postpurchase mean value of 2.2162 in the same Phase; and finally, in Phase II it moved to a postpurchase mean value of 2.0545.

In contrast, the trend of means of Paper Mate moved from smaller values under comparative treatments to larger means under conventional treatments as is shown in Table 2. The trend of larger means obtained on Paper Mate under conventional treatments are due to the absence of the comparative ad favoring Scripto. The larger means may also indicate brand loyalty toward Paper Mate.

Purchase Dimension

Out of a total of 273 subjects, 174 (63.7 per cent) redeemed their coupons toward the purchase of either Scripto or Paper Mate pens. In Phase I of the experiment, of 70 subjects exposed to the comparative treatment, 37 purchased Scripto and 17 subjects purchased Paper Mate pens. In the conventional treatment group, of 65 subjects, 10 purchased Scripto pens and 25 subjects purchased Paper Mate pens.

In Phase II of the experiment, of 72 exposed to the comparative treatment, 47 subjects purchased Scripto pens and 8 purchased Paper Mate pens. As for the conventional treatment group, of 66 subjects, 13 purchased Scripto pens and 17 purchased Paper Mate pens. Thus, a total of 107 Scripto pens and 67 Paper Mate pens were purchased in Both Phase I and Phase II combined.

Since one of the objectives of the study was to test whether promotional strategies were associated with the two brands of pens, the observations from the experiment are cross-classified in a two-way classification as is shown in Table 5. The variation of purchase rates among the four cells suggests that promotional strategies may be associated with the kind of brands purchased. Expressed in probability terms, are the quantity of each brand purchased independent of the type of the promotional strategy treatments? Analysis of the

TABLE 5

OBSERVED AND THEORETICAL FREQUENCIES: COMPARATIVE VERSUS CONVENTIONAL TREATMENTS AND THEIR RESPECTIVE EFFECTS ON BRAND PURCHASE

	Scripto		Paper Mate		Total
Comparative	84	67	25	42	109
Conventional	23	40	42	25	65
	107		67		174

relationships between sales and promotional strategies by means of Chi-square is in order (Young and Veldman 1977, p.391). Moreover, since the nature of data collected is nominal, and since each cell of the matrix contains more than five observations, the application of Chi-square to the data was deemed appropriate (Green and Tull 1975, pp. 353-55). This statistical tool provides information regarding whether there is a significant interaction effect between treatments and types of pens. The formula used for the computation is in the following equation form:

$$\chi^2 = \sum_1^K \frac{(O - e)^2}{e}$$

Where χ^2 = Chi-square, K = number of categories or groups, O = observed frequency in a category, and e = expected frequency in a category.

The calculated $\chi^2 = 29.99$, (1 d.f.), $p < .001$. At a significance of .05

level, the tabular χ^2 value is 6.63, and even at .001 level, the tabular χ^2 value is 10.2. It should be noted that there is only 1 degree of freedom in a 2x2 table of Chi-square classification. Even though the computed value of χ^2 is far above the critical significance level, Yates' correction for continuity was applied to see if it changed the calculated value very much. Also, since we have a case of one degree of freedom, Yates' correction is recommended (Young and Veldman 1977, p. 390).

The computed value of $\chi^2_{(c)} = 29.92$ which indicated that it would be quite safe to reject the hypothesis of independence between the treatments and the type of pens purchased. As a result, H_3 of the study is statistically supported. That is, the purchase rate of a low involving product will be higher through a comparative advertising strategy providing objective information than through a conventional advertising strategy administered before and after the consumer's attitude is measured. Based on the results obtained from these experiments, a discussion of some conclusions and their implications are presented next.

DISCUSSION

Before presenting the findings of this study, it should be mentioned that the results obtained are from only two experiments which attempted to determine comparative vs. conventional advertising effectiveness through the subjects' attitudes and purchase behavior. Therefore, conclusions should be tempered as tentative. Furthermore, it should be borne in mind that the findings of this kind of experiment are only generalizable to the two promotional strategies (predictor variables) since it was an explanatory and not an inferential study; generalizations are therefore, confined to the promotional treatments and to the experimental subjects.

With the foregoing restrictions in mind, three main findings emerge from this study. The first finding is that prepurchase attitudes of the subjects were low toward the experimental products, irrespective of the kind of promotional strategy employed. This finding was supported by the data obtained in both Phases I and II. Such a finding is consistent with the results obtained in past studies based on the attitude construct of the Hierarchy of Effects. Additionally, it provides support to the "purchase priority" model in the sense that the consumer tends to move from awareness and/or knowledge directly to behavior in low involving purchase situation (Ray 1973, Bearden et al. 1977, Calder 1977, Debruicker 1977).

Thus, prepurchase attitude does not adequately serve as a measuring criterion for effectiveness on sales. The implication to the marketing manager is that pretesting of message effectiveness through the attitude construct may not be an accurate way to determine the efficacy of the advertising's communication and purchase effectiveness in a low-involving purchase situation. Pretesting of message effectiveness, thus, would be reliable through testing the message in the marketplace to see how much pull effect it has on purchase.

The second main finding of this study is that postpurchase attitudes toward the sponsor's brand (Scripto) was high when Scripto was presented through the comparative treatment and the subjects' attitudes were low toward the competing brand (Paper Mate). This finding was strongly supported by the data obtained in Phase I; and weakly supported, in Phase II. Such a finding is somewhat at odds with that in Phase I. A plausible explanation can be derived from the fact that after coupons were distributed in Phase II, the bookstore had to open a new shipment of Scripto pens to replenish the stock; prices had gone up, but the increase in price was absorbed by the researcher so that

conditions would not change in Phase II. This new batch of pens (Scripto) must have been inferior for several subjects during the debriefing session remarked casually that although the ads claimed "smooth flow of ink" for Scripto, that their pens were "messy" from overflow of ink. In the event that the quality of the new batch was in fact inferior, this lends support to the contention that after purchase of a low involving product, if the claims live up to the expectations of the consumer, then a positive attitude may be formed.

The implication to the marketing manager is that postpurchase attitude would serve better as an indicator of how favorably or unfavorably the product is regarded by the consumer. Before purchase, the consumer would have little knowledge and experience about the product in light of the inclusion of new attributes in the product as advertised through a comparative or conventional advertising strategy. However, after purchase of the advertised product, s/he would have an opportunity to interact with the product. Out of this interaction, an attitude is formed, favorable if the product lives up to its claims, unfavorable if the attributes were not real or they were faulty. Thus, it would be more reliable to tap consumer's postpurchase attitude rather than the prepurchase attitude in determining advertising effectiveness.

Finally, the third finding is that the purchase response of the subjects exposed to comparative treatment was higher compared to conventional treatment subjects. The sponsor brand sold better through the comparative ad than through the conventional ad. Such a finding contradicts previous studies on comparative advertising which implied that comparative advertising was not any more, or even less, effective than conventional advertising on consumers' purchase behavior as reflected from their respondents' low attitudes and

intentions to buy (Golden (Golden 1975; Ogilvy and Mather 1975; Wilson 1976). On the other hand, it is consistent with the reports of successful practices of comparative advertising from the marketplace (Tannenbaum 1976); such a finding also supports the assumption of the "purchase priority" model that a comparative advertising which provides the consumer with objective information about the product has greater effect on consumer's purchase behavior than a conventional advertising strategy would have in a low involving purchase situation.

Finding comparative advertising to be effective on purchase behavior in this study is also consistent with the nature of the present-day consumer who is more educated than his or her counterpart of some decades ago. Therefore, s/he has become a more discriminating buyer. The implication to the marketing manager is that s/he should strive to provide the consumer with objective rather than subjective, nonfactual information. Due to inflation and its attendant negative effect on consumer's buying power, the consumer wants to get fair return on each dollar spent. Therefore, any comparison based on objective attributes which appeal to the consumer's rational motives, such as lower price, higher quality, and longer durability, etc., creates an interest in the consumer to try the product which has discriminating attributes over its competitors.

Recent studies are also indicating that it would be possible to change what consumers know and believe about products by means of objective product information (Scammon 1977, p. 153-54). Moreover, consumer's yearning for novelty, his or her desire to try the unknown, new things, and ideas is fundamental to human nature. To ignore the power of novelty as a source of satisfaction is surely wrong. Comparative advertising seems to be a convenient source to provide the consumer with easy and inexpensive information about the discriminating attributes of a product, and thus, this recent promotional strategy is

superior to non-comparative (conventional) advertising strategy based on the evidence obtained from this study. Obviously, more research is needed to explore comparative advertising effectiveness under different conditions.

Future Research

To extend the scope of the research on comparative advertising, it would be highly desirable to investigate its differential effectiveness across various media such as print vs. broadcast. In the light of new brain research findings, Krugman (1977) reported recently that there is a "difference between low-involvement, non-verbal learning which is produced by television viewing and the high-involvement learning which takes place as a result of reading printed matter." Therefore, there may be a considerable difference of message learning and recall when the advertisement is transmitted through television vs. print media.

It may very well be that comparative advertising is a weak weapon for institutional (prestige) advertising, but chances are that it is an effective tool for promotional (sales) advertising. The consumer may construe institutional advertising as "blowing your own trumpet," a cause to which it might be attributed is the desire of the advertiser to create a good image of his or her company, as findings from Attribution Theory research indicate. Accordingly, the consumer may resist change of attitude for there is no benefit from the information obtained from the ad. On the other hand, even if s/he dislikes the source (company), and in the event the product excels the brand s/he usually buys, out of his or her own interest s/he purchases it.

Another important research question to be answered is whether or not comparative strategy is also effective in the sale of high-involving products where the consumer tends to form a strong prepurchase attitude before buying an expensive or complex product, such as a movie camera or a stereo system.

Although not difficult, but costly, further research is needed to include both low-involving and high-involving products to see if respondent's pre-purchase and postpurchase attitudes differ markedly across these two categories of products. The author of this paper is presently working on such a project. An inquiry is also needed to see whether or not comparative advertising is more effective for the promotion of a new product than for an established one. The new product may elicit curiosity, need for novelty, etc. in the consumer and thus make him/her purchase it.

Finally, to depart from the usual, easy and somewhat speculative methods of measuring comparative advertising effectiveness through the consumer's attitude, further field experiments are needed to determine its effectiveness on purchase of different categories of low involving products. In this area, research should focus on measuring comparative advertising effectiveness through the "purchase priority" model rather than simply through the attitude construct of the Hierarchy-of-Effects model. After all, the ultimate success of the marketing manager depends on profitable sales which is highly congruent with corporate survival and growth objectives.

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REVIEWER'S COMMENTS