


AN EXPERIMENT TO MEASURE THE EFFECTS OF VISUAL IMAGERY
POTENTIAL, MODEL TREATMENT, AND PRESENCE OF IMAGINING
INSTRUCTIONS ON BRAND ATTITUDE, ATTITUDE TOWARDS
ADVERTISEMENTS, AND BEHAVIORAL INTENTIONS

by

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ABSTRACT

AN EXPERIMENT TO MEASURE THE EFFECTS OF VISUAL IMAGERY
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The aim of the present research is to focus on the manipulation of imagining instructions, individual imaging potential and advertising content of pictorial stimulus materials. Measurement of brand attitude, attitude towards advertisements, and behavioral intention to use the product was taken using a semantic differential scale designed by Osgood, Suci and Tannenbaum (1957). Subjects were drawn by a convenience sample from 487 undergraduate psychology, marketing, and history students from Youngstown State University, Youngstown, Ohio. Students consisted of a mixture of both sexes. The design structure was a 2 x 2 x 2 factorial experiment which divided half the subjects into the Imagery Instruction group while the other half constituted the No Imagery group. Half of these two groups were shown the Model portion of the Advertising Content variable

containing a colored photograph of people interacting with the brand object, a personal computer. All subjects were administered the Verbalizer-Visualizer Questionnaire (VVQ) which determined if they were Visualizers or Verbalizers. After the stimulus material was viewed on slides, subjects rated the three dependent variables on the bipolar scales. Finally, all subjects completed the Vividness of Visual Imagery Questionnaire (VVIQ) which determined if they visualized after the imagery instructions were supplied.

Statistical significance was obtained for the main effects of imagery instructions and advertising content (Model treatment) for brand attitude and attitude towards the advertisement. Only the imagery instructions variable produced a main effect for intention to use the brand. No significance was found for the Imagery Potential variable nor for any interactions. Correlation was extremely low between the Imagery Instructions and the direct assessment of VVIQ.

Instructions to imagine did produce more favorable attitudes than the non-imagery instructions for pictorial stimulus materials. Supporting the current experimental hypothesis, the imagery instructions act to strengthen the functional role that imagery plays in increasing the effectiveness of advertising. By increasing the favorableness of brand attitude, imagery instructions have far more support

as a means of producing positive advertising efficacy. A magazine advertisement of people interacting with the brand item created a significant brand attitude rating over the noninteractive ad. Applications are widespread concerning the implications for greater use of magazine ads with interactive displays.

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I. INTRODUCTION

HISTORY

Advertising is as old as trade. Historically, advertising in the print media truly began 5,000 years ago with the Babylonian merchants and the ancient Egyptians carving advertising messages on stone tablets. The invention of movable type in 1440 made it possible to distribute advertising messages more widely than ever before. Yet, it was not until the increase in the literacy rate in the United States along with advances in printing in the nineteenth century that advertising had a real impetus. In 1878, Congress approved second-class postal rates, which permitted publications to be mailed inexpensively throughout the United States. This is what greatly stimulated advertising. Having this new form of information transmission, it was John Powers in the 1880's who pioneered a new kind of advertising copy. By using short, simple words, sounding honest and sincere, Powers--the father of modern advertising--influenced all advertising from that time forward. From the development of advertising copy in the 1800's until present day advertisements, advertising executed an enormous influence on selling.

ADVERTISING IN THE GENERAL MEDIA

Advertising Appropriations

Some corporations spend more dollars for advertising than for any other element of the process of manufacturing and distributing goods except materials and wages. United States advertising expenditures rose 7.8% in 1986 to \$102.14 billion, according to final industry tabulations (Advertising Age, May 11, 1987, p. 12). Although advertising in general rises with the economic growth of the nation, when corporate profits increase, advertising also takes an upturn.

The following analysis of ad expenditures shows the growing increase through the years by the various media. Advertising expenditures for magazines in 1970 was \$1.3 billion rising fivefold to \$5.16 billion in 1985. Expenditures for television rose steeply from \$3.6 billion in 1970 to \$20.8 billion in 1985. Likewise, newspaper advertising costs exceeded \$25 billion in 1985 from a \$5.7 billion in 1970. Radio ad expenses climbed to \$6.5 billion in 1985 from \$1.3 billion in 1970. (Statistical Abstract of the USA, U. S. Department of Commerce, 1987).

Table 1.1 (See Appendix A) provides advertising expenditure volume by major media from 1978 to projected 1987 from Standard and Poor's. Magazine ad revenues are ten-

tatively projected to gain 12%, to \$6.16 billion in 1988. More than ever, the newspaper industry is characterized by greater variability among markets in terms of advertising health. As a whole, however, the climate for advertising has improved in 1987 and is expected to be even better in 1988. Although they remain the medium of choice for national advertisers, the TV networks are also feeling more heat from all other ad-supported media, which are competing in the same increasingly crowded arena. (Standard and Poor's Industry Surveys, October 15, 1987--Section 3).

Specialized business publications remain the most popular medium, used by more than 90% of the respondents in Business Marketing's annual survey of January 1987. In contrast, only about 20% of the respondents ever use television/radio or daily newspapers.

Advertising's Role in Sales

The role of advertising has been one of generating sales and communicating objectives to inform, persuade, and remind the public. The effectiveness of advertising is first discussed in terms of its role in sales and then as a communicator of marketing goals.

The causal relationship between advertising and sales, in the sense of how many dollars in sales are produced by

how many dollars in advertising, has long been an uncertain one, and yet is basic to most businesses for setting advertising appropriations. Although many corporations go through elaborate processes in allocating money to advertising, there remains the uneasy suspicion that they are often floundering in the dark, because they do not actually know the effect of advertising upon sales. There are so many factors that influence sales other than advertising that it is extremely difficult to establish any direct relationship.

Recently released in November, 1986, was a landmark project conducted jointly by the Advertising Research Foundation and the Association of Business Publishers which approached the question of advertising's effectiveness. Results served to reaffirm the positive link between business publication advertising to sales and profit. The data provided strong evidence that business-to-business advertising works. With all other marketing variables apparently remaining constant after controlling advertisement exposure, different sales levels were presumed to be caused by the advertising differences.

ARF president Michael Naples (1987) summed the results:

The study reaffirms that when the effects of advertising can be isolated in a single-variable experimental approach, the sales-generating ability of the advertising medium can be pinpointed and shown to have a substantial

effect on the brand franchise. (p. 51, Business Marketing, May, 1987)

While advertising scored highest for building brand awareness and favorable image, it is not confined to producing long-range results. The study also showed that advertising can help achieve short-term goals. Advertising is very broadstroke and is more generally relevant to all marketing objectives, even those for which trade promotions are thought best. For example, advertising in the 1980's has shown some usefulness in gaining local store support and availability/distribution.

Advertising: Communicator of Market Goals

Basically, the main purpose of advertising is to help achieve certain stated marketing goals. This implies not only that marketing goals should be specific, but also that advertising's part in helping achieve them should also be stated specifically. In other words, if the advertising appropriation is to be a meaningful and productive one, it should assign to advertising the missions that advertising can accomplish. The two main functions of advertising in respect to the promotion of products or services are to increase the awareness on the part of consumers of a product, and to enlarge their favorable attitude toward it. Based upon experience, it can be established as a matter of

correlation, that when consumers are increasingly aware of a product's existence and are increasingly favorable to it, they buy it in greater quantities.

As mentioned earlier, one of the purposes of advertising is to achieve awareness. Awareness ranges from recognition to recall on a continuum. The now classic research on awareness of various stimuli is that of Paivio (1969, 1971) who defined it as a discriminating, implicit verbal response. Operationally, Percy and Rossiter (1983) defined awareness, "as an advertising communication effect, as encompassing responses that allow the prospective buyer to identify the product, on cue, in sufficient detail to enable purchase" (p. 103).

The typical reasons for advertising include all the ones that ad people usually give--to educate and inform the customer, to stimulate demand, to pull customers into the showrooms or onto the trade show floor, to open the doors to salesmen and to make those who have already decided feel comfortable about their choices.

The goal also is to influence people's behavior. This may involve convincing people to purchase a particular product, or it may involve also convincing people to change their views (for example, a public-service message against drugs).

The Mechanisms

All advertising, regardless of kind, is aimed at triggering perceptual, cognitive, affective, and behavioral responses in each individual reached. Advertising can only work if it is received, comprehended, and responded to in some way. Response concerns learning, attitudes and more importantly, behavior. In consumer goods marketing, behavior generally means buying, either for the first time, more frequently than before, or as frequently as before.

Inadequacies that Advertising Faces

It would be fruitless to assume that advertising alone is directly responsible for consumers' purchase decisions. Neglecting market forces of supply and demand, impetuous buying needs and sociocultural trends, let alone political forces, would be intellectual suicide. In comparison with the influence of society as a whole, advertising's importance is small indeed. According to Jones (1986):

Knowledgeable advertising people know that their best efforts can only either reinforce or slightly modify attitudes that are built into people's psyches. Advertising is rather a weak force when it is expected to persuade people radically to change existing attitudes. It is evidenced for instance by the shockingly high failure rate for new brand introductions. In some cases, this is a result of deficiencies in the advertising; in all others, it is an illustration of the inability of advertising to overcome other inadequacies in the marketing mix. (p. 35)

MENTAL IMAGERY

It was Denys Thompson who succinctly phrased the all-encompassing role of advertising: "Advertising is a main voice in our culture and what it says is very largely malignant." And so it is for the way advertising maneuvers itself to be a driving force--a process--of persuasion that oversteps every boundary of literacy, illustration, and technology in order to be effective.

Part of this pervasive power of effectiveness is spawned by the phenomenon of imagery. Feelings, aroused not by the advertisement directly but by other things which it suggests may elicit imagery. In daily life one is continually reacting to things beyond the mere objects of perceptual experience. Those objects of previous situations call up imagery which colors one's attitude. Just as a photograph reminds one of the original person or a strain of music brings back memories of school days, the picture in the advertisement, the slogan, or even the trade name may arouse imagery in similar fashion and take the reader far beyond the magazine. The direction in which it takes him may have a bearing on the sale.

Association and imagery are aroused by certain words, largely owing to their literacy usage. High imagery visuals are those that themselves arouse other mental images (i.e.,

a mental picture, a sound or a sensory experience) quickly and easily. Verbal stimuli producing the highest imagery value are usually concrete in nature. An ad describing squeaky-clean hair washed by a particular shampoo is more vividly pictured mentally than the words "BEAUTIFUL HAIR." The mere phonetic composition of words quite apart from their meaning may carry some imagery with consequent pleasant or unpleasant feelings. The making of particular sounds influences the affective attitude toward those sounds. Words like "sputter," "chatter," "giggle," "hiss" imitate natural sounds and remind one of their subjective identity. The same arousal of imagery occurs in much the same fashion by illustrations and graphics. Pictures are used in the particular sense department that is appropriate. In the field of temperature the picture of an Eskimo is featured in connection with a brand of ice cream. The effect of the advertisement extends beyond the mere perceptual experience to the images and associations that surround it.

Individuals differ in imagery type, that is, the facility with which they can call up images in the various sensory modes. Some can readily imagine how an object looks and others are more successful in imagining its sound. Unfortunately, the advertiser cannot know the imagery type

or degree of the readers of a particular advertisement. Hence, in evaluating the advertisement, consideration should be given to the associations and images which it will arouse and whether those images will be pleasant or appropriate to the product.

The goal of any message is to be understood. Craik and Lockhart (1972) have suggested that the more meaningful or comprehensible something is, the better it will be remembered. With this in mind, psycholinguistic research from Paivio (1971) discussed the effects of imagery in verbal stimuli and its relationship with memory comprehension. Clearly, any means by which awareness is tapped becomes vital to advertisers. Visual and verbal imagery creates greater awareness through the generation of mental images. It is these mental images that lead to a greater learning response (Paivio, 1971). Advertisers have long realized the importance of advertising that creates mental images in the consumer's mind. The advertiser has to pay attention to the planning and execution of both visual and verbal content except, obviously, in radio advertising.

INFORMATION PROCESSING

People process information differently. Depending upon the various situations, individuals act on their environment

in an active or reactive manner, forming beliefs and attitudes concerning what they read and hear. They may choose to respond to a persuasive message or they may choose to interact in a noncognitive way and merely perceive the message. What transpires between the perception of a persuasive message and the recipient's response can be an innumerable number of variables.

A type of information processing seats itself in a rather ubiquitous area--that of imagery. Although many definitions may be expounded, the conditioned sensory response of which imagery consists is an information processing strategy from which learning takes place. In general, the literature on imagery indicates that presentations which elicit imagery are better remembered and more positively evaluated than presentations which do not. Since attitudes are a direct response to learning, this type of processing strategy needs to be researched.

The purpose of attempting to analyze people's mental and behavioral responses to advertising is that the increased understanding will lead to increased efficiency in advertising planning. Recall techniques of measurement have been used through the years to determine the extent of media persuasion. If individuals could remember items and

and intent

situations within the context of an advertisement, then those individuals were deemed to be well on their way to converting awareness to brand preference. If dimensions of imagery or information processing elicit more recall and more positive brand attitudes, then advertisers can use these relationships to establish stronger means of persuasion to the public.

There is no simple and direct connection between factual recall on the one hand, and preference and buying behavior on the other. The measurement of advertising effectiveness has provided a continuing impetus to the study of the value of attitudes (or attitude change). The growing popularity of attitude measures has been accompanied by the long-held "hierarchy of effects" hypothesis (Lavidge & Steiner, 1961) which allows for the consideration of attitudes in the measurement of advertising effectiveness.

The general area of information processing, regardless of discipline, has relied heavily upon verbal information processing and has utilized recall measures as dependent criteria. Studies by Rossiter and Percy (1978); Mitchell and Olson (1977; 1981), and Wright (1979) have addressed the notion of imagery in advertising communication, using visual versus verbal stimulus materials, with beliefs, attitudes, and intentions as dependent variables. Thus, the role for

visual imagery in increasing cognitive response to advertising has proven to become a stimulating area of research to study.

BRAND ATTITUDES

Attitudes change in response to a persuasive advertisement first through types of events--events within the person, events associated with a communication that attempts to persuade, and events surrounding the setting in which the attitude change occurs such as distracting aspects of the situation. These events may either heighten attitude change or reduce its likelihood. Then, there are interpersonal or personality factors that intervene to facilitate or block any attitude formation. There are some people for whom the intrapersonal factors are so overriding that they determine, by themselves, whether or not there will be acceptance of virtually any persuasive communication.

There is no one opinion or theory concerning the influence of advertising on brand attitude. The major theoretical framework that relates advertising to attitudes was based on a simple chain of causality entitled "the learning hierarchy" in which the stages in the chain are equivalent to "learn-feel-do." People receive factual knowledge about a brand. As a result, their attitudes

change and they develop a preference for it, then they buy it. This theory from which others have branched is more likely to operate with print advertisements. Another theory of "low involvement" rests mainly on the changing awareness and knowledge of brands that lead directly to a purchase decision, which subsequently leads to the development of attitudes from brand use. The "learn-do-feel" theory was a reaction to the first theory. Yet, a third approach known as "do-feel-do" interacts attitudinal feeling with behavior.

The FCB Model

Embodying the Learn-Feel-Do model with consumer involvement theories is the Foote, Cone and Belding (FCB) Model which places involvement on one continuum while a cognitive to affective continuum borders the outer quadrant. The model arranges the type of product advertised to the information processing mode and the means of measuring such a mode.

In the learning of new attitudes three variables are hence important: attention, comprehension and acceptance. Before an advertisement or communication can bring about attitude change, it must be noticed. But even when the appeal or ad is noticed, it may not be effective. For

example, the recipient may be unable to comprehend or assimilate the communication.

Despite the information overkill provided us by advertisements, we are still a long way off from understanding the dynamics of attitude change. There are a number of theories of how attitude change takes place, but each theory has a different focus.

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II. REVIEW OF LITERATURE

Although many people report the presence of visual images while they are trying to reproduce visually presented material, it is not clear what part these images actually play. Sheehan and Neisser (1969) have stated that:

Three different functions are possible: (1) the subject uses his/her image directly as the sole source of information; (2) the image is one source of the information, used by the subject together with other sources; (3) the image is present but the subject bases his/her responses entirely on other kinds of information. (p. 71)

The present experiment is an exploration of several variables including instructions for imagery, individual differences, and advertising content that adjusts for people-to-product interactions. In summary, from looking at the manipulation of advertising content presentation, will the treatment condition of imagining instructions affect brand attitude, behavioral intention to purchase and the possible intermediary of attitude towards advertisements? The purpose of this study will manipulate imagining instructions in order to directly assess the vividness of imagery in subjects who have either viewed or not viewed people interacting with the stimulus object.

IMAGERY

Studies by Rossiter and Percy (1978, 1980), Mitchell and

Olson (1977, 1981), and Wright (1979) have addressed the notion of imagery in advertising. Early studies of advertising effects focused on visual characteristics of print advertising and their effects on recognition scores but did not attempt to advance any theory as to how advertising communicates visually. It was Krugman's research in 1966-67 that gave a glimmer of a hint of visual processes in advertising and even at that the processes were unclear.

IMAGERY - DEFINITIONS AND TYPOLOGY

Most of the empirical work on imagery has been influenced by the early work of Sir Francis Galton in 1883. He developed a questionnaire for determining the types of images that a person had, and the vividness of those images. Galton, whose work did so much to encourage the study of individual differences between people, may well have been investigating processes universal in humans. Galton's method was extended by Betts (1909) in the questionnaire on Mental Imagery, which was revised later by Sheehan (1967). It was the growing prominence of behaviorism with its attempt at eliminating anything subjective which led to the ignoring of images. Today, more recently, imagery has taken a new turn in connection with cognitive psychology.

CLASSIFICATION OF IMAGES

Despite this recent interest in imagery by psycholo-

gists, mental imagery is still a rather poorly understood construct. There are some pertinent conceptual problems with imagery that must be clarified first. As with any global or broad concept, there are a number of definitions and classifications of kinds of images that have proved to be useful in the past, and remain with us today. First, there is a difference between spatial abilities and mental imagery abilities that creates a distinction with the way definitions of imagery are categorized.

Spatial Ability vs. Mental Imagery

Richardson (1983) has clarified that spatial ability and mental imagery are uncorrelated and separate factors. This assumption that spatial and imagery abilities have something in common is unfounded and usually grounded in the belief that visualization of something, such as the arrangement of furniture in a room is synonymous with imagining this scene. "Visual imagery of a quasi-perceptual nature is not necessary to the performance of spatial tasks, and confusion results when it is introduced" (Richardson, 1983, p. 10). He cited two investigators who often confuse imagery within their work. Shepard (1978; Shepard & Metzler, 1971) dealt with mental rotation, whereas S. Kosslyn, S. Pinker, G. E. Smith, and S. P. Shwartz (1979) have been involved with men-

tal scanning: "The images we experience are spatial entities and their spatial characteristics have real consequences for some forms of information processing" (p. 537). They further continued: "...we have good reason to posit that the imagery system has the capacity to retrieve and integrate 'chunks' stored separately in memory. Thus, we are justified in concluding that a theory of imagery must explain how images are constructed from organized units stored in long-term memory" (p. 539).

Mentally rotating an object does not imply the presence of visual images in awareness. To exemplify, Richardson (1983) used this illustration:

To decide whether the top of a horse's tail is higher off the ground than its knees does not require the emergence into consciousness of a pictured horse. No sensory or perceptlike content need be in awareness to have this particular feeling of knowing. By allowing the term "imagining" to suggest visual imagery, as most of us experience it in awareness, a commonsense interpretation is assumed but is not justified. (pp. 10-11)

We have seen the clarification of imagery and spatial ability in order to establish the independence of imagery. Before enumerating any definitions, it is important to look at classification, recently compiled by Richardson (1983). There are three groups of researchers having different conceptualizations of imagery: (1) those using the behavioral

approach such as Paivio (1971), Neisser (1972), and Sarbin (1972), who explicitly stated that, "the experience of having a mental image is not an essential part of its nature or functions" (Richardson, 1983, p. 13); (2) those such as Shepard and Kosslyn described above who dealt with spatial ability information processes, and (3) those such as Hollenberg (1970) who investigated individual differences in imaging ability as they relate to other cognitive activities as verbal learning, and problem solving. What these three types of researchers have in common with their concept of imagery is what Richardson (1983) referred to as "an inferred construct or process of an essentially nonphenomenal kind" (p. 13). Richardson's idea for imagery is that of a phenomenal nature. Therefore, as Richardson (1969) defined it:

Mental imagery refers to (1) all those quasi-sensory or quasi-perceptual experiences of which (2) we are self consciously aware and which (3) exist for us in the absence of those stimulus conditions that are known to produce their genuine sensory or perceptual counterparts, and which (4) may be expected to have different consequences from their sensory or perceptual counterparts. (pp. 2-3)

Before reviewing the various definitions of imagery and the following research dealing with it, it is necessary to examine a familiar classification of images. It must be emphasized that it is an arbitrary classification that is

referenced by the conditions that arouse it or relate to the characteristics composing it. Holt (1964) was the first to investigate the differences in imagery.

After-Imagery

The first type of imagery is called AFTER-IMAGERY which is the prolonged stimulation of a sensory experience. From the point of view of the subjective experience, it is a consequence of the withdrawal of sensory stimulation. Hilgard (1981) elaborated that, "the primary defining characteristics of the visual afterimage are its content, which appears as if located externally, and its movement, which corresponds to movements of the eyes" (p. 8).

Memory Image

A memory image is a recall with imaginal content deriving from earlier perceptual experience. It is differentiated from an afterimage in that it does not move with the eyes as an afterimage does, so that local retinal stimulation is not involved. Richardson (1983) described "memory" or "thought imagery," as "the type of imagery which varies considerably in vividness and controllability, from person to person and perhaps within the same person from day to day" (p. 27 and 28). Sheehan and Lewis (1974) analyzed this concept through an experiment; in paraphrasing their

results, they confirmed that the greater confusion (uncertainty or frustration) produced in the course of a thought or action sequence, the more likely it is that imagery will be aroused and the more vivid it will be.

Eidetic Imagery

According to Hilgard (1981), "an eidetic image is often described as a special class of reproductive or productive image that is unusually vivid and percept-like" (p. 8). Nonetheless, in summarization of their work, Paivio and Cohen (1979) through factor analysis found it to be a distinct phenomenon that is unrelated to spatial ability, ability to produce vivid thought imagery and verbal ability.

Hallucinations

Creating a distinction for this category, Hilgard (1981) clarified that, "hallucinations are perception-like images that are no longer considered as a part of the taxonomy of images (p. 9).

Imagination and Fantasy Imagery

Richardson (1983) defined imagination and fantasy imagery:

If the adaptive demands of the external world are reduced so that attention can be safely withdrawn from it, the characteristics of spontaneous thought imagery may change into

the characteristics of imagination imagery. The phenomenal qualities of novelty, substantiality, and color, which have been used to discriminate imagination imagery from thought imagery may represent qualitative changes at some point in a series of quantitative changes. (pp. 32-33)

Richardson explained these qualities further:

As attention is withdrawn from the external world of perceptual events, it may become increasingly attached to events in the inner imaginal world. If this dissociative shift is prolonged, we can become absorbed in the quasi-perceptual content that we find there. The content of these more intense experiences may be unexpected and apparently unconnected with any identifiable memories from one's personal past (i.e., novel); it may have the appearance of being physically present (i.e., substantiality); and it may be very detailed in texture and vividly colored. (p. 33)

These images are not identical with night dreams but include hypnagogic images that commonly appear while falling asleep or upon awakening.

SIGNIFICANT DEFINITIONS OF IMAGERY

Returning to Richardson's classification of concepts of images per research group, several noteworthy definitions of imagery may be mentioned.

Paivio (1971) wielded a behavioral approach as an explanatory construct. The term image is:

Used to refer to a memory code or associate mediator that provides spatially parallel information that can mediate overt responses without necessarily being consciously experienced as a visual image. (pp. 135-136)

Mentalism was never mentioned as an aspect of this foundation for an information processing model. Imagery is one of two types of cognitive codes--the other is a verbal code. This cognitive code is activated when individuals have a preference for using this code, in anyone when instructed to imagine, or when the stimulus can be assumed to require visual imagery processing.

G. A. Miller, E. Galanter and K. Pribram, (1960) said that an image is "all the accumulated, organized knowledge that the organism has about itself and its world." For Mowrer (1960), "it is an internal model which controls approach and avoidance behavior." Both of these researchers aligned their definitions in the behavioral realm allowing their understanding of images to favor an S-R reinforcement theory. In Hebb's (1968) view, imagery is:

A reinstatement of the perceptual process in which cell assemblies are activated in the absence of the stimulus pattern on which they were originally based, (p. 470). Hebb's definition expands imagery: In physiological terms, 1st-order cell assemblies are the basis of vivid specific imagery, and that higher-order assemblies are the basis of less specific imagery and nonrepresentational conceptual processes. (p. 466)

Hebb (1968) included a mechanistic physiological explanation to imagery that lacked any bearing on mental representations. Hebb's (1968) analysis of imagery found it to be

no more introspective or inward-looking than perception and was based on the same neural mechanisms:

With regard to a report of imagery,...one is not describing the image but the apparent object....One does not perceive one's perceptions, nor describe them; one describes the object that is perceived....The mechanism of imagery is an aberrant mechanism of exteroception, not a form of looking inward to observe the operations of the mind. (pp. 467-468)

In keeping with the behaviorist tradition, Leuba (1940) defined images as "conditioned sensations" patterned after the classical conditioning experiments of Pavlov. In Leuba's discussion section:

Our experiments indicate that after an inadequate stimulus has been present a number of times, while an individual is experiencing certain sensations, it will by itself automatically, and without the intervention of any conscious processes, produce those sensations. An image can, therefore, be considered as a conditioned sensation. (p. 351)

While Richardson (1969) adopted a strictly phenomenal definition, writers from the psychoanalytic field such as Horowitz (1972) tended to accept the implicitly dualistic position that images may be either conscious or unconscious. Image meant "a representation of information that has a sensory quality when that representation is consciously experienced" (p. 282).

primary-p
association

RESEARCH IN IMAGERY

Personality

Earlier work on imagery after Holt's (1964) typology of images was published focused on personality. Gordon's (1972) observations that uncontrolled imagery was related to neuroticism suggested that the ability to control imagery may contribute to psychological health. Yet, Singer and Antrobus (1972) did not substantiate Gordon's claim and stated that the existence of imagery per se has little relationship to mental health. They explained that flexible and controlled imagery does appear though to be a contributing factor to healthy personalities. As Singer and Antrobus (1972) reported:

Imagery and fantasy are perhaps best regarded as fundamental human capacities or cognitive skills that can reflect serious pathology or distress but that can also be employed as valuable tools for self-gratification, planning, or creative activity in a most adaptive way. (p. 201)

Creativity

Since imagery has also been associated with primary process thinking, the possibility of a consistent relationship between creativity and imagery was strengthened. Reyher and Smeltzer (1968) investigated the comparative amount of primary-process material reflected in free imagery and free association:

The uniformly positive results reflect the superior uncovering properties of visual imagery over verbal associations. These results are consistent with clinical experience, which has found free imagery to be a more powerful uncovering procedure than free association. (p. 221)

Imagery abilities might well be associated with hypnotic talent. In a discussion of imagery, Hilgard (1981) distinguished a range of imagery involved with hypnosis. Although tests such as the Betts Questionnaire on Mental Imagery never correlated very highly with tests of hypnotic responsiveness, this lack of correlation may be due to a capacity for imaginative involvement in experiences. This involvement goes beyond imagery and may account for a lack of relationship to hypnotism. There was even a study that investigated the relationship between field independence and imagery. Walker, O'Leary, Chaney and Fauria (1979) suggested that mental imagery would be more often utilized by field-independent individuals since they are dependent on internal as opposed to external referents and could differentiate internal as well as external fields from each other. (p. 195)

RECENT RESEARCH

Processing Variable

To date, recent research has focused primarily on ima-

gery processing as a process not a structure. The following enumeration of research is not exhaustive and does not attempt to suggest a comprehensive review of all research work performed on or related to imagery. Therefore, the focus in this paper of imagery research will be restricted to that of imagery in learning, and that of imagery instructions. The literature review of MacInnis and Price (1987) defined imagery as:

A process (not a structure) by which sensory information is represented in working memory. Imagery processing, and information processing in general, fall on an elaboration continuum that ranges from processes limited to the simple retrieval or evocation of a cognitive concept to processes involving multiple concepts and constructions (e.g., problem solving, creative thinking, and day-dreaming). (p. 473)

Imagery processing as they defined it operates in much the same way as perceptions of external stimuli that include perceptual and sensory representations found in working memory. In this respect, imagery as a process is not inconsistent with the phenomenal type of definition suggested by Holt (1964), Richardson (1969), and Marks (1983).

Imagery can be described along several unique sensory-related dimensions. Vividness refers to the clarity of images. Controllability reflects the extent to which images can be held in mind and/or altered in specific ways at will. Marks (1972) indicated that, "By vividness we mean a com-

ination of clarity and liveliness. The more vivid an image, the closer it approximates an actual percept" (p. 83).

The first researcher to study vividness of imagery was Sheehan in a series of experiments on the literal function of imagery. (Sheehan, 1966a, 1966b, 1967b; Sheehan & Neisser, 1969). The effect of different instructions on accuracy of recall was investigated in various ways. Although Sheehan had used an imagery questionnaire (Betts Questionnaire Upon Mental Imagery; Betts, 1909, and later his own shortened form of Betts Questionnaire, 1967a), results showed no differences between the effect of instructions to "image" and to "recall." Sheehan and Neisser (1969) concluded, "Nevertheless, the better recalled designs were generally described as being accompanied by more vivid imagery" (p. 71). The questionnaire was administered in order to categorize subjects as "vivid imagers" or "poor imagers" but not as a direct measure of manipulated imaging.

MacInnis and Price (1987) cited research on imagery as a processing mode (imagery vs. discursive) and processing level (high vs. low elaboration) done by Craik and Lockhart (1972) and Petty and Cacioppo, (1983). MacInnis and Price

(1987) found that, "Specifically low elaboration has been implicitly linked to imagery and high elaboration to discursive (symbolic, language-like) processing" (p. 475).

There have been a few empirical studies concerning visual communication in advertising. Holbrook and Moore (1981) focused on the impact of mental imaging on the presence of cue configurality in a product evaluation task. While the study centered mainly on processing differences for verbal versus pictorial presentations, "the subject's claimed processing strategy (discursive vs. imagery) exerted a significant moderating effect on the predominance of cue configurality due to different input formats" (p. 103).

Research on Learning

Studies of the effect of imagery in enhancing incidental learning have been reviewed by Lutz and Lutz, 1978.

In marketing, the effects of imagery on paired associate learning have been applied in several ways. Lutz and Lutz (1977) found that pictures (imagery-eliciting stimuli) in advertisements had a positive effect on memory for product-relevant information when the brand (company) name and product attribute were unified in a picture (interactive image.) Childers and Houston (1984) reaffirmed the picture superiority effect on imagery in learning, concluding that

pictorial ads were recalled to a much greater extent than verbal-only ads when encoding focused on the sensory features of advertisements. They resolved that, "verbal-only stimuli are recalled as well as pictures in immediate recall but fail to be recalled at a later time when encoding focused on the semantic content of the ads" (pp. 649-652).

Research on Imagery Instructions

The role of imagery research has demonstrated that the "image-evoking value" of words correlates highly with learning these words. Anderson and Hidde (1971) revealed that adults who used imagery remembered more of the content of a prose passage than subjects who did not. "People instructed to form images of the events described in sentences recalled more than three times as many words as people who merely pronounced the sentences" (p. 527). According to Anderson and Hidde (1971), on the basis of the process hypothesis:

Imagery instructions facilitate sentence learning because such instructions induce the subject to meaningfully process the words whereas one may otherwise do no more than translate them into speech. What is important is the process of conceiving a link between the things and events named by the words, rather than the link itself. To put this another way, it is the act of bringing to mind meaningful representations that is the precursor to learning. (p. 526)

Rasco, Tennyson and Boutwell (1975) tested both adults and school age children using instructions to form mental images on a task requiring the processing of verbal information rather than direct recall. The data analysis showed that the better treatments included instructional strategy supporting Paivio and Yuille (1967) in their work on paired-associate learning.

Children remembered more after reading a passage when they received imagery instructions, especially if the instructions were preceded by training in the use of this strategy. Kulhavy and Swenson (1975) focused on this aspect, "We are able to conclude that image-instructions act to increase the amount of text-content available over time. These results are in line with the original prediction that images work primarily to increase retention" (p. 51). Pursuant to those studies introducing mental imagery instructions, Pressley (1976) ventured at training subjects in forming mental images. The study suggested that:

Mental imagery training can be easily taught in the classroom and improve children's memory of passages they read:The results of the study is that when groups of eight year old children are told to use mental imagery to facilitate their memory of prose, are given practice at forming mental images, and it is guaranteed that the subjects do not attempt to read and image at the same time, then 8-year olds' memory of a very concrete, easily imageable story can be improved by using mental imagery. (p. 358)

Although imagery instructions facilitated learning, the evidence of this learning proved greater in measures of recall.

In a recent series of two studies, Carroll (1978) asked subjects to imagine that either Carter or Ford would win the 1976 presidential election. The dependent variable was the perceived likelihood that the event would occur as imagined. Subjects who imagined the future outcome perceived a higher likelihood of the event occurring than did subjects who did not imagine the future event. Carroll (1978) found that:

The results of these studies demonstrate that instructions to imagine an event are sufficient to increase expectations for that event....The results are consistent with the proposed principle that manipulating the availability of relevant instances by imagining an event is sufficient to change expectations about the event. This is further supported by the fact that imagination did not interact with prior beliefs about the presidential election. (p. 94)

Slee (1978) manipulated three independent variables: visual and concrete stimulus attributes; imagery instructions; and individual imagery capabilities in order to test the validity of the assumptions that the same intervening mental process is responsible for the performance effect in each case. Measuring recall in two separate experiments, Slee (1978) found a significant interaction between imagery instructions and individual imagery ability when using verbal concrete nouns as stimulus materials. However, in the

second experiment no main effect or interaction using pictorial drawings were uncovered. Slee (1978) concluded that, "The second experiment showed that the effects of the joint manipulation of instructions and imagery ability are not consistent across stimulus types" (p. 18).

Imagining Instructions and Attitude/Intentional Measures

In a series of experiments conducted to determine the viability of a scenario procedure as a compliance technique, Gregory, Cialdini and Carpenter (1982) led subjects to imagine themselves experiencing events likely to happen. Imagery had a powerful effect on attitude toward the service and behavioral intention:

Imagination-condition subjects reported that they were significantly more likely to want CATV (Cable TV--the imagined event), had significantly more positive attitudes toward CATV, were significantly more likely to request additional information about CATV, and were significantly more likely to subscribe to CATV than information-condition subjects. (p. 96)

Evidence from the study by Gregory, et al. strengthened the argument for imagery instructions albeit the situation was not an advertising/marketing one.

Instructions to Imagine with Vividness Effect

Vividly presented information has been widely shown to induce greater recall than more pallidly presented infor-

mation. The issue of the effects of vividness becomes more salient where attitude or persuasion is the criterion for judging message effectiveness. Kisielius and Sternthal (1984) provided evidence for the existence of a vividness effect on attitudinal judgments. In their study, one variable was presentation format: verbal statements describing the characteristics of a new product accompanied by pictures or presented alone. The other variable was the instructions given to subjects: subjects received instructions to create mental images while viewing each message statement or did not receive these instructions. Subjects' attitudes toward the product were measured as the dependent variable.

When instructions to imagine were tested, the presentation format of the first variable did not have a significant effect. Kisielius and Sternthal (1986) found that, "The judgments in the picture condition were not affected by the manipulation of instructions to imagine" (p. 423). They interpreted the outcome as occurring because image instructions reduced the favorableness of subjects' responses in the verbal condition. Later, in the same article, Kisielius and Sternthal (1986) explained the findings on attitudinal judgments in terms of an availability-valence hypothesis.

Problems and Difficulties with Imagery Instructions

Using mental imagery to learn new concepts may not improve learning according to Rigney and Lutz (1976).

Supporting this find, Lutz and Lutz (1978) added:

The failure of mental imagery instructions to aid new concept learning in both adults and children is plausible because it would not be expected that people are capable of forming mental images of concepts with which they are not yet familiar. (p. 614)

As Rigney and Lutz (1976) concluded, "Simply instructing the student to generate ad hoc mental imagery in order to facilitate acquisition and retrieval of complex subject matter encounters obvious difficulties with the existing structure of the knowledge to be learned" (p. 311).

Difficulties with imagery instructions not only lie with new conceptual matter to be learned but also with inclusion of written words. Possibly, the act of reading may interfere with the ability to produce imagery. Brooks (1967) found that mental imagery was more readily elicited during listening than reading by adults; Levin and Divine-Hawkins (1974) found that children who listened to a passage remembered more than those who read it. The situation of external stimulation interfering with the generation of imagery may have caused the instructions to imagine to be inefficient in Mowen's (1980) study. Mowen (1980) relied on

positive and negative forms of instructions to imagine in order to measure recall and experimenter favorableness towards radio advertisements about shampoo. In his discussion section, Mowen (1980) indicated that the non-standardized setting of a dormitory room for the conductance of the experiment may not have relaxed subjects enough for the "imagining" treatment condition to operate. Another explanation for the lack of results may have been the lengths of the instructions to imagine. He cited Carroll (1978) who discussed the idea that the effect of imagination instructions may "depend upon the provisions of a relatively detailed, vivid, and concrete scenario" (p. 94). Mowen concluded, "Our relatively short scenario may not have met these requirements" (p. 142).

Wright and Rip (1980) in studying advertising effects on first-time buyers' decision strategies in selecting colleges used imagery instructions. Wright and Rip felt:

The imagery instructions did not consistently enhance the message stream effects on preference deliberations....One possible reason for the modest effect is that these embedded instructions were just too weak to evoke increased imagery. More attention-getting instructions may be necessary. (p. 186)

First-time buyers' decision plans are affected at times by advertising messages. Wright and Rip (1980) concluded "the messages varied the degree of similarity in the attri-

butes or the comparison procedure discussed and the use of the imagery instructions" (p. 176).

The selected means of measuring the thought processes that occur between imagery instructions and non-imagery instructions were designed to track thought verbalizations.

Availability Heuristic as Explanation

Tversky and Kahneman (1973) revealed that "any incident that makes the occurrence of an event easy to imagine or recall is likely to enhance its perceived frequency" (p. 210). Mowen (1980) discussed this heuristic in terms of the "levels-of-processing involvement" model established by Craik and Lockhart (1972). Mowen (1980) elaborated:

Deeper level processing might result from asking subjects to consider whether they have had personal experiences with a product versus asking subjects to indicate whether the product name is in script letters. Application of the "levels-of-processing" analysis to the use of imagination is straightforward. Asking individuals to imagine an event may force them to process information at a deeper level. (p. 140)

Mowen felt that the deep processing resultant from the imagining instruction would increase memory recall of the event and henceforth make it more "available" for retrieval. Mowen's study expanded the use of the "availability heuristic" in combination with the levels-of-processing involvement theory in order to test instructions to imagine on a measure of recall and experimenter favorableness.

ADVERTISING - RESPONSE MODEL

It would now seem that imagery affects not only verbal communication but also visual communication. Rossiter and Percy (1978) addressed the question of where imagery effects fall in relation to a more traditional processing consideration.

The Rossiter and Percy research to date has found varied and significant visual-imagery responses for both visual and verbal stimuli in mediating belief, attitude and intention responses to advertising. The ability of visual elements in advertising to mediate product attitude independent of verbal elements was the result of the 1978 study. The verbal elements also affected product attitude through a visual-imagery response.

Paivio (1971) had shown that verbal stimuli simultaneously could evoke visual imagery as well as verbal-comprehension responses. According to Paivio's (1971) dual-code theory, information presented pictorially is most likely to be represented using both a verbal and visual code; concrete words are less likely to be represented using both codes, and abstract words normally are represented with only a verbal code. Researchers such as Paivio (1969, 1971) and Hulse, Deese and Egeth (1975) had shown a consistently more powerful influence with the visual-imagery value of

verbal stimuli on verbal learning than other verbal comprehension factors such as the meaningfulness of the stimuli. Rossiter and Percy (1978) indicated that:

Indeed the imagery value of a verbal stimulus has consistently been shown to have a more powerful influence on verbal learning than verbal comprehension. Verbal stimuli having the highest imagery value are those of a more concrete nature. Concrete verbal stimuli are those which have clear, "real world" referents as opposed to vague, abstract referents. (p. 621)

Therefore, any initial information-processing response to a verbal element in advertising may trigger either a verbal response or a visual response.

Hence, Rossiter and Percy (1978) created a theoretical model called the ADVERTISING RESPONSE MODEL:

The model holds a crucial implication for individual differences in visual imaging ability. It predicts that visual imaging ability will mediate the processing of both visual and verbal stimuli....The verbal stimulus has two hypothesized components: a verbal-comprehension response and frequently though not always, a visual imagery response. (p. 622)

This model focused on the reinforcement condition of the initial responses. According to Rossiter and Percy (1978):

It is the subsequent responses that are of most theoretical interest in the processing of persuasive information. The present model posits that if the verbally comprehended stimulus is recognized as a favorable one (e.g., the word GOOD vs. the word BAD) verbal reinforcement will occur; and that, likewise, if the visual imagery response to the verbal stimulus is a favorable one (e.g., a pleasant

perhaps personally involving mental picture)
visual reinforcement will occur. (1978,
p. 622)

It has been known that favorably evaluated words act as reinforcers to other stimuli (Staats & Staats, 1957). As a result, attitudinal response toward the product or brand is increased when these verbal reinforcers are paired with a product or brand.

Until Rossiter and Percy's 1978 research, no one had investigated the visual-reinforcement component when processing verbal stimuli. Paivio (1971) had shown that with high-imagery words, verbal learning increased regardless of the connotative value of the words, as long as the imagery values were equal. Rossiter and Percy (1978) supported the learning theory with:

This at first would seem to indicate that verbal reinforcement is not involved in verbal learning but that some type of visual reinforcement, mediated through the word's evoked image, may be. However, "learning" in verbal learning and imagery studies has invariably been defined in terms of recognition or recall. (p. 622)

Subsequently, the dependent variable in their study was an attitude measure.

The definition of imagery chosen by Rossiter and Percy (1978) followed that of Richardson (1969) and not Bugelski (1970). This choice was made in order to better establish

the reinforcing qualities of visual stimuli which was unique from other information processing models.

The basis of the one loop of the model that visual stimuli should produce visual imagery responses was grounded in an experiment by Shepard (1967) where subjects exposed to advertising pictures recognized the ads even a week later. Shepard (1967) stated, "The subjects were still 98% accurate which demonstrated that people stored visual images of every visual stimulus to which they attended" (p. 156).

Relatively little attention has been given to nonverbal information processing and even less to imagery within an advertising context. As mentioned earlier, Lutz and Lutz (1978) reviewed research with imagery-eliciting strategies on pictures and research on imagery instructions. The complete review of imagery in information processing has been performed by MacInnis and Price (1987). The measure of brand and/or product attitudes has recently been a key focus of measurement within visual studies (Rossiter & Percy, 1978; Kisielius & Sternthal, 1984; Mitchell, 1986; Mitchell & Olson, 1981). With this focus in mind, this study turns now to the examination of attitudes and personal involvement in the realm of information processing.

CHAIN OF EVENTS IN ATTITUDES

The response involving attitudes is a direct outcome to

a persuasive message if it is attended to and comprehended. Brand attitudes as an output of advertising can be viewed from three different angles. These three theories of consumer behavior have much similarity to the consistency principle mentioned in Organ and Bateman (1986).

Learn-Feel-Do

One theoretical framework that relates advertising to attitudes was based on a simple chain of causality described by Charles Ramond as "learn-feel-do." Also entitled "the learning hierarchy" (Lavidge & Steiner, 1961), the three stages consist of the cognitive, affective, and conative domains, where cognitive refers to nonevaluative thinking, affective to an evaluative relationship to a brand, and conative to plans for actions or to the overt actions themselves. Awareness is a brand's relative prominence. Attitude here is an evaluative relationship of preference and desire. Intention to purchase is the extent of commitment to a future action. These three definitions fit the hierarchy.

Empirical research performed by Terrence O'Brien (1971) found results that basically supported the hierarchy propositions:

Within the sequence of cognitive, affective, and conative psychological states over time, results basically supported the hierarchy predictions. Awareness was found causally prior

to attitude, intention, and purchase, and attitude and intention were each causally prior to purchase. (p. 289)

Learn-Do-Feel

Criticism of the learn-feel-do theory that communication also works in the reverse direction with behavior influencing attitudes brought forth a second theory designed by Herbert Krugman (1965) described as "learn-do-feel." The idea followed on the concept of low involvement as it applies to people's relationships to products, brands, and the media. Based on the impact of television commercials, Krugman's involvement theory eliminated the need for persuasion in advertising, i.e., overcoming a resistant attitude. The basic tenet in this theory falls on the changing awareness and knowledge of brands that leads directly to a purchase decision, which subsequently leads to the development of attitudes from brand use. "With low involvement one might look for gradual shifts in perceptual structure, aided by repetition, activated by behavioral-choice situations, and followed at some time by attitude change" (Krugman, 1965, p. 583). This theory supported the research of Bem (1970) and Festinger's (1957) cognitive dissonance theory that behavior leads to attitude formation.

The involvement theory expanded beyond that of intensity of information processing--the number of personal connec-

tions a person was able to establish upon being presented with a message. Mitchell (1979) defined involvement as a variable which has both direction and intensity. This definition represented an important and interesting development in the conceptualization of the involvement construct. In operationalizing this construct, he relied on the direction and the intensity of attention. According to this operationalization, "a low level of involvement exists when the subject's attention is on nonbrand elements, such as an attractive model or the background aspects of the commercial, rather than on brand elements" (p. 192). Mitchell's subsequent research (1986, 1986) on involvement and later with brand processing aimed at proving a mediator variable--attitude toward the advertisement--that would serve to alter the attitudinal measures.

Do-Feel-Do

Mitchell's motivational construct of involvement surrounded the paradigm of effects on information processing. In viewing the whole picture, the difference in the level of involvement is only one domain to have important implications for information processing. There is also the types of involvement--cognitive and affective--which are likely to have considerable differences in many aspects of

the encoding process. Types of involvement, especially imagery will be explored later in this section.

Finally, the third theory of advertising's chain of events is actually known as the Reinforcement Hypothesis, developed and explored with considerable intellectual rigor by Ehrenberg (1974). Jones (1986) remarked on the theory, "This hypothesis is the notion of trial and reinforcement, embracing the idea of advertising addressed to existing users of a brand and aimed at reinforcing their preference for it, and perhaps be upgraded from minor to major brand" (p. 144). In the article by Ehrenberg (1974), the author perceived brand choice behavior as 1) gaining awareness of a brand, 2) making a first purchase, and 3) being reinforced into developing and keeping a repeat buying habit. Ehrenberg (1974) explained, "The way this habit develops for a particular brand is primarily a matter of reinforcement after use. Any feeling of satisfaction--that the brand is liked at least no less than the previously bought ones--has to be nurtured" (p. 31). The theory is an interaction of the conative and affective processes among existing users of a brand. This "do-feel-do" theory is the way in which advertising probably works in most cases. Jones (1986) formulated that, "The interplay between feelings and behavior eliminates any factual learning from the advertisement" (p. 148).

FCB Model

Integrating these three theories with consumer involvement theories is a relatively new model - the FCB Model - which helps organize advertising strategies for a product. The model says that consumer entry into a product should be determined for information (learn), attitude (feel), and behavior (do) issues to develop advertising. The FCB model removes the straight-line continuum and places it in a quadrant pattern in order for the advertising strategy to coincide with the particular type of product sold and the point where the consumer enters the circular Learn-Feel-Do pattern. Four outcomes could occur within the two dimensional continua of the model - thinking to feeling and high to low involvement. In the first quadrant of high involvement, high thinking mode, the durable products would demand a learn-feel-do approach with the consumer in a thinker role. The second quadrant of high involvement, feeling mode with self-esteem/emotional oriented products would require a Feel-Learn-Do model engaging the consumer to do more feeling. The third quadrant of low involvement, high thinking mode with non-durable products would respond to a Do-Learn-Feel model with the consumer becoming an active doer. Finally, the fourth quadrant of low involvement, feeling mode consists of self-satisfying products demanding

a Do-Feel-Learn model creating a reactor type of consumer.

Attitudes are measured according to the FCB model in the second quadrant. Nevertheless, the FCB model supports the Learn-Feel-Do hypothesis of the learning hierarchy where attitude is the evaluative relationship between preference and desire of the "affective" (feel) stage, which is in the first quadrant.

Advertising behaves in the same manner as any persuasive message, in order to influence the recipient's behavior to achieve awareness. The process in which consumers handle the stimuli they confront and act upon their decisions is known collectively as human information processing.

Attitude is a consequence to information processing, a form of measure to consumer behavior decision making; therefore, information processing precedes the discussion on the nature of attitudes.

HUMAN BEINGS AS INFORMATION PROCESSORS

Simply stated, each processor is capable of receiving information, operating upon it according to certain rules, storing the results of these operations in memory, altering the contents of certain areas of memory to which new information is relevant, and ultimately reporting the results of these operations in a form that is implicitly or explicitly specified by a "user."

Wyer (1974) described the nature of information-processing:

An information-processing orientation suggests the need to consider the effects of (a) differences in the amount of information the subject is required to receive at any given time and (b) the complexity of the cognitive "rules" required to process the information adequately. (p. 13)

The above description is rather limited in that only cognitive thinking is included if information is to be processed at all. The amount of information that a person could process is therefore restricted.

Effects of Situational and Individual-Difference Variables

At times, when a subject is distracted from a task, this distraction may impair the input of information received and the effective integration with other information in memory. It is probable that many situational and individual-difference variables because of their mediating influence upon the reception and integration of information, determine the impact of new information on beliefs and attitudes. The individual-difference variables are also affected by the relevance of the information not only to the subject, but also to the one communicating to the individual. People may process information differently if they believe the communicator is interested in their recall of information presented rather than their judgment on a particular matter.

Effects of Amount and Type of Information

The difficulty of processing a given set of information may depend, in part, upon characteristics of the information itself. In other words, as Wyer (1974) has indicated:

The rule used in processing inconsistent (or hard to understand) information may differ from that used to process more consistent (or easily interpretable) information. If this is the case, attempts to identify a single information-processing rule that governs the integration of all types of information may prove frustrating. (p. 15)

It is this observation of no one single "way" in which to process a certain kind of information bit or unit that needs to be emphasized.

CONSUMER INFORMATION PROCESSING

Input-Output Model

The way consumers deal with the stimuli which they confront can strongly influence their thoughts and purchase patterns regarding products and services. Since consumers are problem solvers who use information in an attempt to satisfy their consumption goals, it is necessary to define information processing in terms of consumerism. Loudon and Bitta (1984) in their textbook examined this definition:

From this perspective, consumer information processing may be thought of as the acquisition of stimulus inputs, the manipulation of the inputs to derive meaning from them, and the use of this information to think about products or services. (p. 414)

Information processing itself is the process that consumers use when dealing with the environment. The above definition places heavy emphasis on a computer-like model of human information processing that involves activities for acquisition, perception, memory, integration, evaluation, and finally, choice. Although these models of consumer behavior have indeed been helpful, such models have failed to explain the processes underlying advertising effects in which "affect is not only the outcome of advertising processing but a determinant of such an outcome as well" (Batra, 1986, p. 53).

It is important to look at the effects of involvement in terms of its causes or types as well as its strengths on information processing. But first, a few conceptual clarifications should be made at this point.

THE EFFECTS OF INVOLVEMENT IN INFORMATION PROCESSING

Some Definitions

In pursuing different areas of involvement, researchers have introduced a variety of conceptual definitions of the involvement construct. Lastovicka (1979) classified different levels of involvement as they are related to levels of acquisition for products obtained and used by consumers:

A low involvement product class is one in which most consumers perceive little linkage to their important values and is a product

class where there is little consumer commitment to the brands. Less frequently purchased, and more brand differentiated product classes, such as automobiles or stereo equipment are often given examples of high involvement product classes. (p. 174)

Traylor (1981) took exception to Lastovicka's definition of low/high involvement products and stated that these terms are imprecise: "Strictly speaking, no product is inherently ego involving or uninvolving. Only consumers can be ego-involved, and, for any given product class, one segment can be highly involved and another not" (p. 51).

Wright (1974) clarified Krugman's (1965) definition of involvement to contain two processes--the arousal to process and the opportunity to process:

Involvement in actively processing information is largely a function of a person's recognition that the information has goal-satisfaction value to him....An advertisement that is highly arousing to a receiver by virtue of its content may be transmitted in a form that restricts the opportunity for response, or vice-versa. (p. 194)

In consumer behavior, conceptual views of the involvement construct not only differed among researchers in social psychology but also differed among consumer researchers in terms of the degree of specificity as well as in the contents. These differences produced a number of operational definitions of involvement.

Krugman (1965) interpreted involvement in terms of the

intensity of information processing by measuring the level of involvement in terms of the number of personal connections an individual was able to make after being presented with a message. Krugman (1965) defined personal involvement as "not attention, interest, or excitement but the number of conscious 'bridging experiences,' connections, or personal references per minute that the viewer makes between one's own life and the stimulus" (p. 355). Krugman's conception of involvement contained two levels--high and low. Greenwald and Leavitt (1984, p. 582) asserted, "This distinction with its association to effective advertising has stood up well in light of subsequent research."

Involvement Routes

Involvement is considered a motivational, predispositional construct, and research investigating the interaction of involvement with attitudinal routes has used "involvement" in this sense. Experimental manipulations of involvement have reflected this link with attitudes in research by Petty and Cacioppo (1979) who demonstrated that it is the amount of cognitive responses that the respondent produces about an advocated message position which mediates the effects of high issue involvement on attitudinal routes.

Petty and Cacioppo (1983) viewed involvement as the construct

distinction between peripheral and central routes to persuasion: "The central route views attitude change as resulting from a diligent consideration of information that is central to what people feel are the two merits of the advocacy" (p. 3). Attitude changes induced through the central route tend to be relatively permanent and predictive of subsequent behavior. In terms of a peripheral route, Petty and Cacioppo (1983) indicated that, "attitudes change because the attitude object has been associated with either positive or negative cues or the person uses a simple decision rule to evaluate a communication" (p. 4). It is not assumed with the latter route that the recipient will undertake the considerable cognitive effort required to evaluate the merits of the message.

Arousal Equivalents

Mitchell (1979) defined involvement:

As an individual level, internal state variable whose motivational properties are evoked by a particular stimulus or situation. As such, it has two dimensions, intensity and direction. Consequently, in discussing involvement in a particular context, we must define both the level of involvement (e.g., high vs. low) and also the direction of involvement (e.g., directed at the advertised brand or at an element of the advertisement).
(p. 191)

Mitchell's level of arousal conception of the involvement construct is criticized for its narrow focus on the direc-

tion of attention on the message or advertisement. Park and Mittal (1985) observed:

It is not clear why a subject who is highly involved in the nonbrand elements of the commercial should be characterized as a low-involvement subject. Frequently, nonbrand elements, such as visual aspects in the commercial, play as powerful a role in concept formation as the brand elements (message contents). (p. 205)

Attentional Capacity

Patterned after Craik and Lockhart's (1972) level of processing theory, Greenwald and Leavitt (1984) developed the four levels of the audience involvement model. As designated by Greenwald and Leavitt (1984), "These levels from low to high--preattention, focal attention, comprehension and elaboration--allocate increasing attentional capacity to a message source, as needed for analysis of the message at one of a series of increasingly abstract representational levels" (p. 581). The major distinguishing feature of their (1984) definition is the focus on attentional capacity, levels of processing, and (somewhat) arousal:

The four levels differ in the abstractness of symbolic activity used in the analysis of an incoming message. The progression from preattention (the lowest level) through elaboration (the highest) is assumed to be accompanied by the allocation of the increasing capacity, which is required for increasingly abstract analyses of incoming information. (p. 584)

Preattention uses little intellectual capacity. Focal attention uses modest capacity which interprets the messa-

ge's sensory content into various categories (object, name, word). The third level, comprehension analyzes speech or text by constructing representations of it. The last level, elaboration, uses still more capacity to integrate message content with existing conceptual knowledge.

PARK AND MITTAL'S CONCEPTUALIZATION

Park and Mittal (1985) have dissected the effects on information processing into types of involvement and levels of involvement.

Types of Involvement

The types consist of cognitive and affective involvement. The distinction between the two types is relevant to the cognitive response theory when representing consumer reactions to persuasive communication. When using the cognitive response theory, people actively generate cognitive responses such as supporting arguments, counterarguments and derogating sources in their minds. Since the affectiveness of a message depends more on the cognitive responses that are generated than on the message content, Park and Mittal (1985) suggested, "This form of cognitive response would be more relevant under the cognitive involvement condition than under the affective involvement condition" (p. 214).

Levels of Involvement

The effects of involvement based on type assume that the subjects are already highly involved yet have different motives. When the subject's involvement is low, his/her attention focus lacks direction and the level of processing is superficial. In terms of the "hierarchy-of-effects" model mentioned at the beginning of this paper, high involvement subjects proceed through the steps outlined as cognition, affect, and conation. However, subjects in the low involvement condition reverse the steps (i.e., conation or behavior occurs before attitude toward the product or message). According to Lutz and Lutz (1978), "If this reversal is in effect, then traditional forms of advertising pretesting which rely on brand attitude as a surrogate for subsequent market behavior may be quite useless" (p. 617). Under low involvement, focused mental processing is not required for attitude formation.

MEASURE OF ADVERTISING EFFECTS THROUGH RECALL

Since one of the roles of advertising is to stimulate brand recognition or brand recall, the problem becomes how to measure these effects. It would seem obvious that if the reader could merely recall what was read and seen in a print ad, that the cumulative effects of an advertisement could be

summed. As Jones (1986) remarked, "Recall scores are a purer measure than recognition since they are more concerned with whether or not a person can recall an advertisement with his or her conscious mind. Nevertheless, recall measures, like recognition, are not free of contaminating factors" (p. 137).

Lack of Correlation with Ad Effectiveness

Young (1972), director of research services for Grey Advertising in New York, investigated the recall technique and uncovered a substantial number of exogenous variables that deteriorate the reliability of the technique. In fact, Young (1972) reported a correlation of .05 between recall and persuasion. Differences between test cities, brand usage and amount of time the interview takes place after exposure, are a few contaminating factors found in Young's (1972) research. According to Young (1972), "The correlation of .05 indicates that there was no relationship between recall and attitude shifts from 15 tests. There was no relationship between consumer recall of a benefit and their conviction about it. Nor is remembering messages necessarily related to favorable disposition toward a brand" (p. 5).

There is no simple and direct connection between factual recall on the one hand, and preference and buying behavior on the other. As Young (1972) clarified:

A high recall score is considered to indicate a sales-effective commercial, a low recall score an ineffective commercial. But evidence shows that recall and persuasiveness are separate effects of advertising and that recall alone by no means measures all selling effects of a commercial. (p. 5)

In comparing implicit versus explicit advertising copy, Young (1972) continued:

Some advertisers use recall scores as a standard test for all types of copy. But high recall does not necessarily mean that the copy will sell. It communicates but may lack credibility, therefore, it is not persuasive or motivating to consumers. In short, recall is only relevant to explicit copy and is a partial measurement even then. Recall is not relevant to implicit copy, and should not be used to measure it....Logic aside, the evidence suggests that recall does not measure the persuasiveness of advertising. Thus, recall should be considered only a partial measure of the selling effectiveness of advertising. (pp. 6-7)

The measurement of advertising effectiveness has provided a continuing impetus to the study of the value of attitudes (or attitude change). Recently, the impetus has become stronger as the alternative measures of effectiveness, such as sales effects, changes in awareness, and factual recall, have proved invalid or more difficult to isolate. From 28 empirical studies, Haskins (1964) concluded, "Learning and recall of factual information from mass communications does occur. However, recall and retention measures seem, at best, irrelevant to the ultimate

effects desired, the changing of attitudes and behavior" (p. 7).

Haskin's (1964) intention was to disprove many of the theories of his day which included some mention of knowledge, or factual learning, as a necessary step in the communication and persuasion process. Such theories proposed that a certain sequence of psychological effects must be induced for advertising to be successful. One such model to which Haskins (1964) referred lists awareness, comprehension, conviction, and action as necessary steps.

Previous industry research from Young (1972) indicated a weak relationship between recall and persuasion. Gibson (1983) reviewed eight studies that examined this relationship and found a weak or insignificant correlation.

Jones (1986), in reviewing advertising tracking methods, commented on the problem with recall measurement: "We should never lose sight of the proven lack of connection between advertisement recall and attitudes and behavior. The communication of factual points is only the beginning of what is required for effective advertising" (p. 147). Jones (1986) then clarified that recall testing is quite useful to measure learning per se. Recall testing is a viable measure of an individual's ability to remember and relate what has been read, seen or heard, therefore monitoring the learning

process. Yet, in no way do we see a link in assessing whether or not a consumer has been persuaded by a particular persuasive message based on ability to recall. Jones (1986) finalized the lack of correlation between recall and sales by citing Bogart, Tolley and Orenstein who have said, "There is almost no relationship between an ad's sales performance--when compared with other ads--and its comparative readership performance, as measured either by recognition or recall" (p. 12).

Research in social psychology has explored the relationship between recall of information and persuasion. If attitudes do change in the direction of cognitive content rehearsed during a persuasion situation, then procedures that manipulate the content of the recipient's cognitive responses should have persuasive effect. A traditional persuasion procedure that may be viewed as a manipulation of cognitive response content is role-playing. Subjects tended to recall much more of their own improvised arguments than those improvised by another subject (Greenwald, 1968, p. 154-155). Greenwald (1968) concluded that persuasion and recall of message arguments from other sources have little relationship.

Research from social psychology does not indicate a clear relationship between persuasion and recalled infor-

mation. Within an advertising context, a series of factors are involved: whether or not an advertisement is recalled at all, what influences that recall, and how memory for advertising is related to persuasion.

Beattie and Mitchell (1985) examined the mediating factors listed above. Their results casted doubts on the validity of recall as a measure of advertising effectiveness. They concluded:

A direct link between recall and persuasion will occur only under highly restrictive conditions. Attention is necessary, but not a sufficient condition for recall. In this study, other factors such as processing strategy and type of advertisement were found to affect recall. Finally, some advertisements that were persuasive were not recalled. (p. 153)

In summary, recall testing is only reliable if used in conjunction with other measures because of the substantiated lack of correlation between recall, attitudes and sales.

Improved Measures

In light of the measurement difficulties with recall and the lack of a positive relationship between persuasive advertisements and recall, advertising researchers have chosen brand attitudes and purchase intention as a better assessment. Earlier in this paper, the three theories of advertising learning stages were reviewed. When evaluating

the "feeling" process of any of the three theories, the "feeling" portion would involve people's attitudes to brands, including particular as well as general attitudes along with strength of all these attitudes relative to other brands.

In some respects, the use of attitudinal criteria is a measure of expediency. Day (1970) remarked that:

Attitudes show larger and more immediate effects than could ever be expected with purchase (sales) results. The research design is usually simple, inexpensive, can provide results immediately and can be related to the results of post-tests of the alternative. Under the appropriate conditions, attitude measures have very useful diagnostic properties. (p. 30)

The growing popularity of attitude measures has been accompanied by the long-held model of a "hierarchy-of-effects" (Lavidge & Steiner, 1961) explained previously. Reliance on attitudes was also one of the strengths of the DAGMAR (Defining Advertising Goals for Measured Advertising Results) measurement procedure, because it forced a specific statement of the objectives of the advertising in terms that were measurable with attitude variables, (Colley, 1961).

ATTITUDES

Definitions

Historically, attitudes have been defined in terms of a feeling of favorableness or unfavorableness toward an object

which mediates overt behavior toward that object. For example, Allport (1935) defined an attitude as, "... mental and neural states of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related" (p. 798). Anastasi (1976) defined attitude as:

A tendency to react favorably or unfavorably toward a designated class of stimuli, such as a national or racial group, a custom, or an institution. Attitudes cannot be directly observed, but must be inferred from overt behavior, both verbal and nonverbal. (p. 543)

Anastasi (1976) clarified that an attitude is not an observable entity; but, rather, it is an underlying construct whose nature must be inferred. In more objective terms, Anastasi stated that, "The concept of attitude may be said to connote response consistency with regard to certain categories of stimuli" (p. 543).

The number of attitudes is almost infinite; an attitude exists within a person in regard to every object, topic, concept, or human being that the person encounters. Attitudes are always reactions towards an object or topic, hence they differ from "values" which are more abstract and broader. Values do not have an object.

The issue of response is an inherent aspect of the con-

cept of attitude as seen from the previous definitions. The Organ and Bateman (1986) textbook summarized attitude as a, "learned tendency to respond in a consistently positive or negative manner toward some object." Response is measured through three components: an affective emotional response, a cognitive belief, or a behavioral action.

Fishbein's Definition

Most investigators would probably agree with a description of attitude as a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object. Fishbein (1963; Fishbein & Ajzen, 1975) presented a theoretical treatise of the causal basis of attitudes. According to Fishbein and Ajzen (1975):

There clearly exists a great diversity of viewpoints concerning the attitude concept, and this state of affairs is reflected in a multitude of definitions of attitudes. Many of the disagreements among investigators are questions of theory rather than definition.... It follows that these definitions of attitude have no clear implications as to how attitudes are to be measured and the result is the arbitrary selection of measurement procedures. (p. 10)

Fishbein and Ajzen (1975) have defined attitude as, "a function of a person's salient beliefs at a given point in time" (p. 222). The definition followed Fishbein's (1963,

p. 236) expectancy--value model that can be summarized as follows:

$$\text{ATTITUDE} = \sum \text{BELIEFS} \times \text{EVALUATIONS OF THE BELIEFS}$$

A person's attitude toward the stimulus is related to and, in fact, is caused by that person's salient beliefs about the stimulus. Salient beliefs, as distinguished from attitudes, are "those subjective associations between any two discriminable concepts that are activated from memory and 'considered' by the person in a given situation" (Fishbein & Ajzen, 1975, p. 12).

Critics of Fishbein

There are some criticisms of the Fishbein models. In general, the criticisms have emphasized measurement issues and predictive validity, (Lutz & Bettman, 1977). Batra and Ray (1985) have enumerated additional criticisms:

Recent work has suggested, however, that the Fishbein-Ajzen unidimensional model of attitude structure is wrong. Recent studies by Bagozzi and colleagues (Bagozzi, Tybout, Craig, and Sternthal, 1979) have applied the more powerful (Kenny, 1975) Confirmatory Factor Analysis technique to assess the convergent and discriminant validity and have reached dramatically different conclusions. Their analysis suggests quite clearly that attitudes are not unidimensional, but instead have two distinct components, an "affective" and a (multi-dimensional) "cognitive" one. (p. 17)

Evidence has supported the static relationship between beliefs and attitudes as cited in Fishbein and Ajzen (1975),

and experimental evidence supporting the mediating effect of beliefs in attitude formation and change has diminished, (Lutz & Bettman, 1977). Mitchell and Olson (1981) found beliefs to mediate attitude formation but also discovered another mediator:

Fishbein's attitude theory posits that beliefs are the only mediators of attitude formation and change. As expected, product attribute beliefs mediated attitude formation. However, another variable, termed attitude toward the advertisement, also mediated brand attitudes and purchase intentions. (p. 318)

Multidimensional Definition

Some investigators have defined attitude as a complex, multidimensional concept and have turned to multidimensional scaling procedures. The scaling procedure measured attitude in terms of the object's location on the scale. The multi-component model originated with Osgood, Suci, and Tannenbaum's (1957) semantic differential scale. Their instrument identified clusters of scales having a general "evaluative" factor. Batra and Ray (1985) quoted Triandis that:

Behavioral intentions are a function not of a unidimensional attitude construct, but instead of "expectations of consequences" (measured on "good-bad" and "valuable-harmful" scales) and of "affect" (measured on scales of "enjoyable," "interesting," and "pleasant"). (p. 18)

Batra and Ray (1985) tested the multidimensional aspect of brand attitudes using the two components described

above--expectations of consequences and affect. They found that, "...these two components related differentially both to the affective mediating responses measured, and to brand purchase intentions across different involvement conditions" (p. 37).

Measurement of Attitudes

The complexity of the concept of attitude has created many definitions and many ways to measure those definitions. Thurstone (1931) constructed a scale marked off in equally appearing intervals of about 20 statements, and each was spread on a continuum from very favorable to very unfavorable toward the statement.

Osgood, Suci, and Tannenbaum (1957) developed a bipolar dimension rating on a semantic differential basis. Originally, the scale was not constructed for purposes of assessing attitudes but rather as an instrument for the measurement of meaning.

Guttman (1944) created a cumulative ability scale, and Likert (1932) established the statement continuum scale. Both of these scales arrived at a single attitude score based on responses to statements of beliefs or intentions.

Some investigators as Triandis (1964) have expanded multidimensional scaling procedures. The major purpose of

this expansion was to identify the relevant dimensions that underlie a person's judgments of a given object or set of objects. On the basis of Osgood, et al. (1957) work on the semantic differential, Triandis (1964) developed the "behavioral differential" to investigate dimensions of interpersonal intentions. The Batra and Ray (1985) testing of the two-component dimensions of attitude may provide an entirely new attitude scale in the near future.

Attitude Research in Advertising

The attitude concept in marketing as a theoretical basis has been an object of study (Lutz, 1975; Lutz & Swasy, 1977; Olson & Dover, 1978; and Olson & Mitchell, 1975). Patterning after the Fishbein model of attitudes, beliefs were examined within the structure of brand attitude measurement. Olson and Dover (1976) investigated brand attribute belief measures in conjunction with brand attitude measures in order to determine the effectiveness of an advertising message strategy. Olson and Dover (1978) measured beliefs about attributes of the advertised brand, brand attitudes, and purchase intentions in order to determine the multiple effects of a particular communication message.

A considerable amount of empirical research has

illustrated the causal effects of beliefs to attitudes to intentions to behavior within the realm of advertising. Olson, Toy and Dover (1982) cited "fairly consistent support for most of these relationships (e.g., Bettman, Capon, & Lutz, 1975; Lutz, 1975, 1977; Mazis, Ahtola & Klippel, 1975; Mitchell & Olson, 1981)" (p. 246).

Another facet of attitude research delved into stimulus repetition. Based on a classical conditioning approach to attitude formation (Staats & Staats, 1967), Mitchell and Olson (1981) formed the theoretical proposition that "sheer repetition of an advertisement may cause changes in an individual's attitude toward that stimulus" (p. 320). Repetition of an advertisement was one variable tested within Mitchell and Olson's (1981) study on factors mediating attitude formation.

Mitchell (1986) carried his work on mediators to brand attitudes further and developed a Dual Component Model. He discovered that:

(1987) The visual component in advertisements may affect both the formation of product attribute beliefs and the attitude toward the advertisement. Both of these components then have an effect on brand attitudes....Finally, this study indicates that individuals may have different attitudes toward brands even though their product attribute beliefs are the same. This is contrary to the assumption of most researchers in marketing. (p. 23)

SUMMARY

Imagery is not a new concept. Sir Francis Galton studied it in 1883. Many attempts at definitions and classifications have been made since then. From a consumer behavior perspective, imagery should not be confused with mental spatial rotation of objects. Holt's (1964) typology of images were listed in order to lay a foundation to the imagery research. Many definitions have been created; however, much recent research has taken a phenomenal approach towards imagery in keeping with Richardson's (1983) description of it.

The Advertising Response (Rossiter & Percy, 1978) Model created a theoretical framework for explaining visual and verbal information processing and incorporated imagery as a type of involvement that affected information processing.

Finally, a comprehensive experiment performed by Mowen (1980) incorporated instructions to imagine based on an "availability heuristic" devised by Tversky and Kahneman (1973).

The essence of advertisements in the print media is to convey a purposeful, powerful, persuasive message. Better measures are available than the typical recall tests to measure the effectiveness of advertising. Factual recall is quickly administered and inexpensive but grossly inef-

ficient. Attitudinal measures may be the better measure of advertising effectiveness; and, they are not incongruent with consumer behavior theories such as the "learn-feel-do", "learn-do-feel", and the "do-feel-do" hypotheses.

Attitude theory is an area of social psychology and consumer behavior marketing which contains a multitude of definitions, conceptions and applications. Measurement can be unidimensional or multi-dimensional depending upon the chosen definition that is adopted. Attitude research in marketing and in advertising focuses on brand attitudes and attitudes toward advertisements as a mediator to those brand attitudes. Variations in visual forms of advertisements were found to affect attitudes toward brands. Visual imagery may prove to be an important construct to investigate in regards to information processing and measurement of attitudes.

Consumers may be involved cognitively and therefore engage in an active information search and processing effort before forming an attitude about a product, brand, or advertising message. Information processing relates to the degree of involvement towards the product that the individual experiences at a given moment of time. Involvement has been interpreted by theorists in a variety of ways ranging from the extent of personal connections by Krugman (1965),

the level of arousal by Mitchell (1979), to the processing involvement levels by Greenwald and Leavitt (1984). Types and levels of involvement affect information processing. It is the types of involvement--cognitive and affective, primarily affective--which lead directly to imagery used by the recipient.

Attitude is a measurement of affect of a consumer's perception of a product. To date, no other researcher has investigated attitude toward an advertisement and manipulation of imagery instructions. No direct measure has been made using an objective scale to measure imagery as a treatment variable. The purpose of this study is to determine the effect that manipulated imagery instructions, individual imaging potential and interactive visual stimuli have on brand attitude, attitude toward the advertisement, and behavioral intentions.

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III. STATEMENT OF PROBLEM

PURPOSE OF STUDY

Advertisers have long realized the importance of advertising that creates mental images in the buyers's mind. Just as high imagery words have been used in advertising, concrete high imagery visuals have also been used to arouse other mental images. Instructions to imagine one's self in a situation have been researched with lack of significance. In Mowen's (1980) work with auditory instructions, one of the major criticisms was that the instructions may have been too "hyped." Other research by Gregory, Chialdini, and Carpenter (1982); Wright and Rip (1980); Lutz and Lutz (1978); Kisielius and Sternthal (1984); Carroll (1978); Slee (1978) and others had not employed any direct measurement of the imagery instructions by objective means.

Some of the studies mentioned in the review of literature section focused on one of the three methods to induce visual imagery: high imagery stimuli, imagining instructions, or individual imaging ability. Other empirical work dealt with the combination of high imagery stimuli and individual imaging ability, (Childers & Houston, 1984), with imagining instructions and imagery stimuli (Kisielius & Sternthal, 1984) and with imagery stimuli, imagining instructions, and individual imaging ability using both

forms of stimulus materials--verbal and pictorial (Slee, 1978). No study has been done that specifically examines the interaction between imagining instructions and individual imaging ability involving interactive visual pictorial stimuli.

Attitudes have been shown to exert a stronger link to overt behavioral response than to memory recall. Brand attitude as opposed to brand recall had been used as a dependent variable by Rossiter and Percy (1978) in their research in order to measure the effect of visual information processing of imagery.

The purpose of this study is to investigate the impact of manipulated imagery instructions combined with individual imaging potential on brand attitude, attitude toward the advertisement, and behavioral intentions. Also, the presence of people in the advertisements was investigated along with individual imagining potential in terms of brand attitude, attitude toward the advertisement, and behavioral intention.

VARIABLES

INDEPENDENT VARIABLES

The three independent variables this study examined were imagery instructions, imagery potential, and advertising content.

Imagery Instructions

According to Paivio (1971, pp. 135-136), the term "image", "refers to a memory code or associative mediator that provides spatially parallel information that can mediate overt responses without necessarily being consciously experienced as a visual image." This code is presumed to be activated when individuals have a preference for using this code, when anyone is instructed to image, or when the stimulus is assumed to require visual imagery processing. This current study is based on Paivio (1971) and Richardson's (1969) definition of imagery.

Instructions to "imagine" or instruct the reader to form images have been used as a treatment condition in a number of studies. Kisielius and Sternthal (1984) examined the manipulation of imagery instructions prior to the message presentation. This variable was chosen by Kisielius and Sternthal (1984) because it was thought to represent the

same construct as the simple processing of physical objects. Evidence supporting this view was derived from Finke's (1980) review of work on imagery:

Findings show that functional equivalences between mental images and physical objects can exist at many levels of the visual system involved in the perception of an object's identity, especially at those levels where information about an object's size, shape, and orientation is processed....The types of effects that occur cannot be explained on the basis of one's knowledge about objects, about perceptual effects, or one's expectations for performance....Finally, the studies show that observing physical objects usually results in larger effects than forming mental images. (p. 124)

Instructions to imagine were tested in another advertising context by Mowen (1980) who induced subjects to imagine the use of a fabricated product. The positive and negative instructional conditions were contrived in a relatively short scenario similar to instructional conditions reported by Wright and Rip (1980) and Carroll (1978).

Rossiter (1982) critiqued three basic ways to evoke mental imagery: imagery instructions, high imagery stimuli, and individual imaging ability. Slee (1978) discovered that "instructions to imagine" produced positive results when combined with individual imaging ability and with concrete and abstract words used as stimuli. The subjects were told to form a visual image of the situation between sentence

displays that they had previously read. These instructions to imagine produced no main effect nor any interaction effect with imagery ability when the stimulus materials were pictorial drawings.

Gregory, Cialdini and Carpenter (1982) had subjects imagine themselves experiencing certain events while listening to a taped scenario of a likely event. Their research on imagining dealt primarily with a scenario procedure as a compliance technique.

This current study incorporated the short, concise, direct imagery instructions for the instructional condition used by Kisielius and Sternthal (1984), Anderson and Hidde (1971), Kulhavy and Swenson (1975), and Pressley (1976). Subjects in these experiments were told to form mental images of the text that they read or pictures they had viewed.

The imagery treatment may be operationally defined as the presence of imagining instructions. The treatment condition of imagery instructions in the present study contained instructions after the general marking directions. Subjects assigned to this imagery condition were told and read these additional instructions:

As the ad is presented, please try to construct a mental picture or image of the advertisement. In other words, imagine yourself in the situation presented in the advertisement.

In the no-imagery condition, these instructions were absent.

The Measurement of Imagery--The VVIQ

The Vividness of Visual Imagery Questionnaire was used to evaluate whether individuals imaged or not within the two groups of imagery conditions. The VVIQ developed by Marks (1973) is an enhancement of Sheehan's (1967) shortened Betts Questionnaire. Studies have shown the scale to be a useful and valid self-report measure of imagery. The reliability statistics for the instrument had a split-half coefficient alpha of 0.85. Studies investigating the internal consistency of the scale found reports for alpha ranging from 0.91 to 0.94 (Childers, Houston & Heckler, 1985, p. 127). The reliability of the VVIQ exceeds the standard for basic research of 0.80--recommended by Nunnally (1978, p. 226).

The VVIQ was used to designate high and low visualizers in three experiments performed by Marks (1973) in testing recall. On the basis of the scores, the two groups of visualizers were formed. The criteria for scoring were:

1) From 74 total scorers, the 18 lowest scorers formed the High Visualizers, the 18 highest scores formed the Low Visualizers.

2) Eight highest/lowest scores out of 116 total scores from a second experimental run and

3) From a third trial, six highest/lowest scores out of a total 116 formed the low and high visualizers, respectively.

The percentage composition for the criterion was: 24%, 7%, and 5% respectively.

As a measure of individual differences of vividness in imagery-evoking capabilities, Childers and Houston (1984) employed the VVIQ during their experiment tapping memory recall.

Smith, Houston, and Childers (1984) used the VVIQ as a second dependent variable measure in order to be able to attribute any between-group differences on a protocol item analysis.

The VVIQ in this study assessed the imaging capability of the high and low imagers in the Instructional versus No Instructional conditions. Those scoring in the lowest 20% of the total scorers were considered "high visualizers" and those scoring in the highest 20% of the total scorers were deemed "low visualizers". (Many researchers tend to choose 25% as the criterion percentage; the primary investigator chose 20% after deliberating on Marks' criterion scores.)

The VVIQ (Marks, 1973), although not an independent variable, was employed to measure any increase in imaging from the imagining instructions. Richardson (1983) critiqued extensively on the issue of imagery and remarked that:

The instruction to image makes the assumption that all subjects have had the experience of forming an image and will

do so when asked. Merely to show that certain effects follow when this instruction is given is not enough to justify the theoretical argument unless one has independent evidence that the subject has indeed formed a visual image. (p. 8)

Many studies have focused on recall (Slee, 1978; Marks, 1973; Childers & Houston, 1984; Mowen, 1980; Paivio, 1971; Lutz & Lutz, 1978; and Gregory, et al., 1982), effects on attitude (Rossiter & Percy, 1978; and Kisielius & Sternthal, 1984), or an open-ended questioning of protocol analysis as the only dependent measures of manipulated imagery (Wright & Rip, 1980).

This present study measured the imagery ratings following the request to use one's imagination when viewing stimuli. The VVIQ was used as a measure of the subjects' abilities to form visual images as employed in the Kisielius and Sternthal (1984) research on imagining instructions.

Imaging Potential

This second independent variable, imagining potential, was operationally defined as the "Visualizers" and the "Verbalizers" produced from the scores on the 15-item Verbalizer-Visualizer Questionnaire (VVQ) designed by Richardson (1977). Imaging potential reflects an innate ability of an individual to imagine and participate in mental activities.

Richardson (1977) constructed this research instrument in order to measure individual differences in habitual modes of processing cognitive events. The VVQ measurement of the verbalizer-visualizer dimension of cognitive style has a reliability coefficient alpha of 0.54. From the examination of the scale by Childers, Houston and Heckler (1985), the internal consistency might be affected by scale multidimensionality--a verbalizer/visualizer scale. When the two components were examined, alpha for the verbalizer items was 0.66, while coefficient alpha for the visualizer items was 0.64. "Reliability, though lower than desirable, was improved from its original unidimensional level of 0.54 by treating the scale as a two-dimensional measure" (Childers, Houston & Heckler, 1985, p. 128).

Rossiter and Percy (1978) used the VVQ as a measure of individual imagery style in order to mediate the relationship between visually presented advertisements and measures of attitudes. Through the use of the scale, Rossiter and Percy (1978) found that those subjects who were higher visualizers had higher positive brand attitude reactions toward visually oriented print ads.

Richardson (1977) performed several experiments involving the VVQ questionnaire which resulted in the discovery of a presumed link between brain hemispheric functions

and the direction of lateral eye movements. The experiments were in response to verbal and visual types of reflective questions. Richardson in the 1977 discussion summarized the scale:

The VVQ has been found to provide a stable index of an individual's cognitive style which can be used to predict theoretically relevant events of an experiential, behavioral and physiological kind. It can be concluded that a useful research instrument has been constructed; it may be employed with reasonable confidence in the study of many problems concerned with the sequential and parallel processing of cognitive events. (p. 124)

The VVQ was used as the operationalization of the imaging potential independent variable, Visualizers/Verbalizers. Richardson suggested that a 15% criterion should be made for cut-off scores, albeit that actual cut-off scores are arbitrary. Richardson (1977) summarized, "In the validation of the VVQ reported in this paper, the cut-off scores for defining habitual verbalizers and habitual visualizers produced extreme groups ranging between about 15 and 25 percent in each" (p. 123). For purposes of this study, visualizers were operationally defined as the top 15-20% of scores and strong verbalizers were operationally defined as the lowest 15-20% of scores.

Advertising Content

The third independent variable distinguished the stimu-

lus materials presented in slide format to the subjects. The Model Treatment was defined operationally as an advertisement for personal computers with people, both male and female, within the illustration of the ad. The people in the ad were interacting in a positive manner with the personal computer. The model slide had been preselected to be positively affect-laden, while the No Model slide was neutral.

The No Model condition was operationally defined as an advertisement without people in the illustration, only the personal computer was pictured. See Appendix C and D for illustrations.

DEPENDENT VARIABLES

There were three measures that were taken that were considered dependent variables: brand attitudes, attitude toward the advertisement (Aad), and behavioral intentions.

All three measures of the dependent variable employed the use of the semantic differential. Osgood, Suci, and Tannenbaum's (1957) semantic differential scale had an item reliability coefficient of 0.85 on a test-retest correlational method.

Brand Attitude

Rossiter and Percy (1978) have said that, "Brand atti-

tude engendered by advertising is a very good precursor of purchase behavior. Too often a haphazard selection of dependent variables such as beliefs, attitudes, or recall is made" (p. 624). Rossiter and Percy (1978) supported the choice of brand attitude as an appropriate dependent variable referring to it as an "ultimate response in affective learning:"

In retaining a response such as an attitude there is no requirement that the person also retain the original verbal or visual learning experience in toto. Just as it is possible for people to undergo an attitude change without recalling the original verbal content of the persuasive message, it is similarly possible to undergo a visually mediated attitude change without recalling the original visual imagery that produced it (p. 623)

Mitchell and Olson (1981) and Mitchell (1986) selected several attitudinal measures for their dependent variables; thus, they adhered to the various cognitive elements defined by Fishbein and Ajzen (1975) that are commonly measured in consumer research. These measures included belief strength for each brand attribute, attitude toward the brand, attitude toward the act of purchasing and using each brand, and behavioral intention to purchase each brand.

Kisielius and Sternthal (1984) showed subjects advertisements of a fictitious shampoo. The 2 x 2 design investigating imagery instructions and presentation format measured brand attitude.

The design of this present study used the measurement of attitude originally selected from Osgood, Suci, and Tannenbaum's (1957) semantic differential as employed by Rossiter and Percy (1978). The rating scales were good-bad, inferior-superior, unpleasant-pleasant, and interesting-uninteresting, with the end-adjectives in that order. The scales were scored on a six-point system with the sum constituting the overall affective measure of brand attitude, the first dependent variable in the study. A positive brand attitude was operationally defined as mean scores ranging from 3.50 to 6.00, while a negative brand attitude was defined as those ranging from 1.00 to 3.49, e.g. (1 = bad; 6 = good)

Attitude Toward the Advertisement

Mitchell and Olson (1981) suggested that attitude toward the ad could contribute substantially to the formation of brand attitudes. Their research strategy was designed to test alternative theories of attitude formation and change against the verbally oriented Fishbein model that posits that belief formation precedes attitude formation. Mitchell (1983) revealed that:

An analysis of covariance using predicted attitude scores from the Fishbein model did not remove all the reliable differences among brand attitudes, indicating that the beliefs about the brands that were formed were not the only mediators of the effect of the advertisement on brand attitudes. (p. 205)

During exposure to an advertisement, consumers may generate verbal thoughts about the brand and form beliefs about it. These beliefs explained some of the variance in the brand attitudes formed. Also, during exposure to the advertisement, the individual may have made an affective response explaining more variance in the brand attitudes formed.

Lutz (1985), performing research on the affective and cognitive antecedents of attitude toward the advertisement (Aad), had defined Aad as "a predisposition to respond in a favorable or unfavorable manner to a particular advertising stimulus during a particular exposure occasion" (p. 46). Lutz further emphasized that the definition consistent with Fishbein and Ajzen's (1975) definition of attitude, focused on a particular exposure to an ad, not on advertising in general. This affective response may be expected to have its impact on brand attitude during the exposure.

The present study was interested in observing the measurement of Aad, thereby choosing this operational measure used by Mitchell and Olson (1981) and Mitchell (1986). Attitude toward the advertisement was measured by the means of four six-point scales anchored by the adjectives "good-bad", "like-dislike", "irritating-not irritating", "interesting-uninteresting". The coefficient alpha reliability statistic for this measure was 0.90. A

negative Aad was operationally defined as mean scores ranging from 1.00 to 3.49, while those ranging from 3.50 to 6.00 were defined operationally as positive attitude ratings.

Behavioral Intentions

Behavioral intention is the final link from a person's beliefs and attitudes to an actual overt response as conceptualized by Fishbein and Ajzen (1975) in their definition of attitude:

As with a belief, the strength of an intention is indicated by the person's subjective probability that he will perform the behavior in question. All questionnaire or verbal responses are also instances of overt behavior. That is, they are observable acts of the subject. Usually, however, such responses are not treated as records of behavior but are instead used to infer beliefs, attitudes, or intentions. (pp. 12-13)

Rossiter and Percy (1978) found that the effects for intentions were weaker than those for attitudes. "Intentions may therefore be more susceptible to visual advertising content that depicts the target response as to a to-be-performed operant" (Rossiter & Percy, 1983, p. 113). Advertisements or persuasive messages which demonstrate the user actively involved in the desired behavior or the use of the product will produce a higher pursuant behavioral intention when measured afterwards. Wright (1979) found this

effect to be true in the research on T.V. messages. They concluded, "Through increasing the concreteness of the stimulus materials by including both verbal and visual demonstrations of individuals reading drug warning labels, the behavioral intention of such an overt action occurring at a later time had increased" (p. 267).

Behavioral intention (usage) toward the brand was measured following Mitchell and Olson (1981) and Mitchell (1986) on a single, six-point bipolar scale anchored by the phrases "not at all likely to use" and "very likely to use". A positive usage intention had been operationally defined as scores ranging from 3.50 to 6.00; scores under 3.50 were operationally definitive of no usage intention.

ELIMINATION OF BELIEFS

The present experimenter chose to measure brand attitude and attitude toward advertisements. Belief measures were omitted as a choice of dependent variables because of the complexity that it would entail to the body of the study. Since "beliefs" were defined by Mitchell (1986) as the "subjective likelihood that an object possesses some attribute," then characteristics of the object (in this case the personal computer) must be described within the measurement scales. Mitchell and Olson (1981) used a preliminary

testing of subjects in order to determine the appropriate characteristics of the stimulus object(s).

Another reason why the experimenter opted to eliminate "Belief" measures was due to the research performed by Lutz and Bettman (1977). Fishbein and Azjen (1975) stated, "The standard model has difficulty with the belief measures, since degree of possession (high-low) or degree of likelihood (likely-unlikely) do not seem to apply" (p. 148). Their review highlighted models that excluded the confounding of belief strength and content of the belief that are found in the Fishbein model. One such model measured an attitude rating through a scale value for a piece of information. Thus for objective data, each piece of information may be evaluated directly, rather than indirectly as a judgment of belief. Furthermore, Mitchell (1986) concluded that individuals may have different attitudes toward brands, even though their product attribute beliefs were the same. Mitchell (1986) noted that this result was contrary to the past assumption of most researchers in marketing, (p. 23). If beliefs are found to be independent and ungrounded in their relationship to attitudes, then the present study chose not to include the belief measure as part of the dependent variable.

IMAGERY TREATMENT

Carroll (1978) gave subjects specific instructions to imagine themselves in a scenario, thus measuring probable likelihood that an event will take place. The instructions raised the expectancy that an event will occur resulting from the imagined scenario. Within the same vein, Gregory, Cialdini, and Carpenter (1982) expanded Carroll's (1978) findings to support the notion of cognitive availability:

Subjects were provided with highly detailed scenarios describing events that they imagined were happening to them. Relative to control subjects, subjects who imagined scenarios rendered elevated subjective probability estimates for the occurrence of those events that were the subject of the scenarios.
(p. 98)

Providing evidence for the existence of a vividness effect on attitudinal judgments, Kisielius and Sternthal (1984) reported that a negative effect was observed with their manipulation of imagery instructions. Product attitude was measured in the experiment. Subjects were presented with a picture or no picture advertisement and either given or not given instructions to imagine. Their results indicated that instructions to imagine produced an affective rating, albeit a negative attitude in the no picture advertisement. Judgments in the picture condition were not affected by the manipulation of instructions to image.

However, in a study combining imagining instructions, individual differences to imagine, and highly concrete stimulus materials, Slee (1978) found significant interactions between imagery instructions and individual imaging ability only with verbal, non-pictorial items in memory recall.

This present study attempted to determine brand attitude ratings by manipulating the advertising condition and imagining instructions. The advertising condition consisted of the model and no model treatments.

Given the above background, the following hypotheses were generated:

Ho: There is no difference in brand attitude between the imagery and no imagery treatment.

Ho: There is no difference in attitude toward the advertisement (Aad) between the imagery and no imagery treatment.

Ho: There is no difference in behavioral intention between the imagery and no imagery treatment.

ADVERTISING CONTENT

The Model treatment consisted of an advertisement showing people interacting with a personal computer in the

illustration. The No Model condition eliminated the people, illustrating the personal computer only.

Research on the effects of advertising content was performed by Mitchell (1986) in order to answer the inquiry about the use of affect-laden photographs in advertising. Mitchell questioned whether the use of photographs that are affect-laden having a considerable amount of copy had an effect on brand attitudes. Results indicated that they did produce an effect on brand attitudes--the negatively evaluated photographs caused less favorable attitudes than the positively or neutrally evaluated photographs.

Rossiter (1982) had emphasized the importance of interactive visuals for advertising in relating the products to users or usage contexts:

The interactive imagery results suggest that users should be shown actually interacting with the product, on the one hand; and on the other, that products be shown in action in the usage context....The psychological research indicates that associative learning is better facilitated by interactive visuals than by visuals that leave the audience to infer an interaction. (p. 102)

Will the use of positive affect-laden illustrations showing user interaction with the product have an effect on brand attitude and subsequent behavioral intentions? The following hypotheses were created from that basis:

Ho: There is no difference in brand attitude between the model and no model treatment.

Ho: There is no difference in Aad between the model and no model treatment.

Wright (1979) had shown that combined concrete language and visual action demonstration of people-to-product interaction produced a short-term increase in behavioral intention and overt behavioral response.

In the present study, the Model condition of people showing operant use of the product may produce higher behavioral intention ratings than the No Model condition.

Ho: There is no difference in behavioral intentions between the model and no model treatment.

IMAGING POTENTIAL (VVQ SELECTOR)

The VVQ selector condition consisted of the application of the VVQ test in order to determine the two groups of individuals comprising the visualizers and the verbalizers.

Prior research using the VVQ stemmed from Rossiter and Percy (1978) who found that subjects who are high visualizers scored higher brand attitudes toward visually oriented print ads than the verbalizers.

Sheehan and Neisser (1969) concluded that vivid imagers could recall materials better; however, the revised Betts Scale for mental imagery was used and recall was the measured independent variable instead of attitudes. Similarly, Slee (1978) investigated individual imagery ability with Sheehan's 1967 revised Bett's scale and measured recall of verbal and pictorial material. No significance was recorded with the pictorial material stimuli.

Basing this current study on attitudinal research and exploring the dependent variable of attitude toward advertisements, the Rossiter and Percy (1978) experiment provided a solid background for the following hypotheses:

Ho: The VVQ selector has no effect on brand attitude.

Ho: The VVQ selector has no effect on attitude toward the advertisement (Aad).

Ho: The VVQ selector has no effect on behavioral intentions.

IMAGERY AND MODEL INTERACTION

It may be predicted that with the previously discussed research on imagery instructions, the additional combination of the designated model treatment may act to heighten the

effects of imagery treatment to produce a favorable brand attitude. The findings from Kisielius and Sternthal (1984) found that the image instructions reduced the favorableness of subjects' responses in the verbal condition of the presentation format. This present study attempted to demonstrate that if the imagery instructions were combined with the model treatment condition of people, then there would be an effect on brand attitude.

Furthermore, Mitchell (1983, 1986) discovered that in an advertising context product attribute beliefs, as measured by Fishbein's attitude theory (Fishbein & Ajzen, 1975), may not be the only variable that affected brand attitudes when the advertisements contained affect-laden photographs. A second construct, Aad, also had an effect on brand attitudes:

Regarding the factors that affect Aad, this study indicates that valenced photographs have a strong effect on attitude toward the advertisement. If advertisements with valenced photographs are viewed as a type of emotional advertising, then the results of this study indicate that the effects of emotional advertising may operate through Aad. (Mitchell, 1986, p. 22)

Thus, this construct represented the subjects' evaluations of the entire advertisement.

In retrospect, from viewing the information about imagery, interactive advertisements, and the various dependent variables, the hypotheses generated were:

Ho: Imagery treatment and model treatment have no effect on brand attitude ratings.

Ho: Imagery treatment and model treatment have no effect on ad attitude (Aad) measures.

Ho: Imagery treatment and model treatment have no effect on behavioral intentions.

IMAGERY AND VVQ INTERACTION

The study by Slee (1978) measured effects on memory recall by manipulating imagery instructions and individual visual imagery ability. Subjects were exposed to Sheehan's (1967) revised version of Betts Questionnaire upon Mental Imagery (QMI) instead of the VVQ. The interaction between the two factors was significant.

In light of the above examination of the interaction, this present study with different dependent variables generated the following hypotheses:

Ho: Imagery treatment and VVQ selector have no effect on brand attitude.

Ho: Imagery treatment and VVQ selector have no effect on attitude toward the advertisement (Aad).

Ho: Imagery treatment and VVQ selector have no effect on behavioral intention.

MODEL AND VVQ INTERACTION

The opportunity to explore the selected variable of model treatment within the context of the model treatment and VVQ selector interaction was examined in order to determine effects, if any, on the dependent variables. Hence, the following hypotheses were generated:

Ho: Model treatment and VVQ selector have no effect on brand attitude.

Ho: Model treatment and VVQ selector have no effect on attitude toward the advertisement (Aad).

Ho: Model treatment and VVQ selector have no effect on behavioral intention.

IMAGERY, MODEL, AND VVQ INTERACTION

The three-way interaction had an intuitive appeal for careful analysis. The inclusion of all three variables formed an interesting exploration that measured effects on attitudinal and intentional ratings. The following hypotheses were breded:

Ho: Imagery treatment, model treatment, and VVQ selector have no effect on brand attitude.

Ho: Imagery treatment, model treatment, and VVQ selector have no effect on attitude toward the advertisement (Aad).

Ho: Imagery treatment, model treatment, and VVQ selector have no effect on behavioral intention.

IV. METHODS AND PROCEDURES

RESEARCH DESIGN

HISTORY

Selection of the Product - The Personal Computer

Computers are providing exponentially increasing volumes of information to exponentially increasing numbers of users in exponentially decreasing time periods. It is not clear whether this is a blessing, a nightmare, or a mix of the two. Are human assimilation and comprehension abilities evolving at the same rate as information production?

The role of the personal computer in business is expanding dramatically despite recent stalemates in the growth of shipments (U.S. Industrial Outlook, 1987, p. 28-6). The relative importance of technological changes and innovations has dwindled as microsystems technology becomes more standardized. "With an increasing number of microcomputers able to perform roughly similar functions, buyers look more closely at prices, the ratio of price to performance, features, and availability of compatible software" (U.S. Industrial Outlook 1987, p. 28-7). This development indicates that personal computers have become more commodity-like and subject to market forces and marketing methods than sheer technology. This is particularly true

for business/professional applications. Businesses are evaluating new purchases for more practical considerations such as price or compatability.

The personal computer is playing a major part in the move toward office automation. It is being marketed as a general-purpose workstation connected to a network on which it can communicate with the corporate mainframe and other personal computers.

Even presenting the complex mechanism of a "Computer" through advertising media poses a problem. Throughout the fast-paced eighties, the computer was shown as an information driven, technologically sound piece of equipment created to suit any personal, business, or educational need. It was advertised as the nemesis or panacea for the control of all data.

Advertisements are now showing interaction with the personal computer in order to project a more humane and comfortable feeling with the computer. These revisions in advertising were again reciprocating consumer need. One computer firm, in order to ease the product line into more homes and offices, is conveying within their T.V. and print advertisements a friendly, humane, personable image that should go a long way toward making personal computers less intimidating as a technology.

The persuasive message found in these personal computer advertisements is attempting to produce awareness and alter brand attitudes to eventually effect a behavioral change through purchase intention. Seeing the special concerns of computer advertisements, it becomes necessary to regard changes in brand attitude and purchase intentions in terms of human information processing. The thought processes involved in the choice and use of personal computers (a durable product) are one of high consumer involvement. Major purchases, such as a personal computer, imply a large need for information because of the importance of the product and the thinking issues related to it. The computer fits into the basic strategy of the FCB Model's Quadrant 1 High Involvement Informative matrix. Therefore, the intent of selecting personal computers within the advertisements was basically to test high involvement stimulus materials within the context of the current design.

Selection of Slides

Prior to executing the experiment, a trial was run to determine the appropriate stimulus materials. A convenience sample of 35 undergraduate students from two marketing classes at Youngstown State University participated in a preliminary testing of stimuli. After viewing 19 colored

slides of personal computer illustrations photographed from magazine advertisements, subjects were told to evaluate the illustrations of each slide. Focusing only on the illustration, participants had 5-8 seconds in which to form an opinion. Advertisements representing computer manufacturing companies were matched--one with a photo of the personal computer alone and one with a person/s interacting with the computer.

The students evaluated each photograph along six nine-point scales anchored by the adjectives: "good-bad", "like-dislike", "pleasant-unpleasant", "favorable-unfavorable", "active-passive", and "successful-unsuccessful". After coding the results, a routine FREQUENCIES program in SPSS was used to calculate the mean for each slide. The photographs that had the most positive and most neutral evaluations were selected as the experimental photographs. The photograph with the people generated the most positive mean evaluation, while the photograph without the people was rated as a neutral slide. Negatively evaluated advertisements were discarded because according to Mitchell (1986), "they caused less favorable attitudes than the positively or neutrally evaluated photographs" (p. 17). The selected photographs were both of the Hewlett-Packard Company demonstrating the personal computer with and without

people in the advertisements. Approximately the same amount of copy was printed in each ad. A copy of the Selection questionnaire is found in Appendix B.

DESIGN

The design structure was composed of a factorial design using an expanded posttest-only control group design. The intent of this design followed the purpose of factorial designs established by Kerlinger (1973) who defined it as, "the structure of research in which two or more independent variables are juxtaposed in order to study their independent and interactive effects on a dependent variable" (p. 351). Factorial designs within an experiment allow one to test a number of hypotheses and yield a great deal of information. The posttest-only control group design was selected because only an assessment measurement was taken, not a pretest, and the subjects were randomly assigned to the experimental treatment groups. Campbell and Stanley (1963) have elaborated on the factorial usage: "In a typical single-classification criterion or 'one-way' analysis of variance we would have several 'levels' of the treatment, with perhaps still an X_0 (control) group" (p. 27).

The diagram of the design appears below:

IMAGERY TREATMENTS

Imagining Instructions No Imagining Instructions

Imaging Potential Visualizer Verbalizer Visualizer Verbalizer

Dependent Variable Measures

Model Treatments

Model

No Model

THE POSTTEST-ONLY CONTROL GROUP DESIGN

	IV	DV
R	X	O
R		O

The design structure was a 2 x 2 x 2 factorial experiment with three independent variables. Imagery instructions and advertising content were active variables and individual imaging potential was an attribute variable. The design of the study required each subject to be exposed to one value of the active and one value of the attribute variables. The dependent variables were brand attitude, attitude toward the advertisement, and intention to use the product.

PROCEDURE

Subjects were randomly assigned into four groups: model treatment with imagery instructions, model treatment with no instructions, no model condition with imagery instructions, and finally, no model condition with no instructions.

Before the start of each experimental session, all subjects were told that this was a marketing study designed to evaluate ads for Hewlett-Packard personal computers. All subjects were administered a questionnaire; the first part containing a brief description of Hewlett-Packard (the product brand in the advertisement). After giving ample time to read the paragraph, the subjects were told to complete the 15-item true-false questions. Based on scores of these questions (the VVQ), individuals were categorized as visualizers or verbalizers. Depending on which condition of the advertising content variable the subjects were assigned, the appropriate slide of the advertisement was shown for ten seconds exposure time. The slides are pictured in Appendix C and D.

Next, the experimenter read the additional printed instructions which detailed how to complete the attitude ratings and behavioral intention measure. The imagery instructions were printed here at this point for the imagery treatment group. Then, all subjects evaluated the slides

according to the bipolar scales of the dependent variables.

Finally, instructions were read to mark the responses on the 16-item VVIQ scale denoting vividness of mentalizing various items. At the end of the questionnaire, subjects were asked to write their thoughts concerning the purpose of the experiment. A copy of the full questionnaire is included in Appendix E.

One month after the experiment was conducted, a debriefing follow-up letter was mailed to all respective classroom instructors to be read and posted for the participating class. The explanatory letter is listed in Appendix F.

SCORING

The scoring procedure for the VVQ followed Richardson's (1977) scoring where a TRUE response was assigned a value of 2 and a FALSE response a value of 1 for visualizing items; the opposite was done for verbalizing items. Totals were then summed. A high score indicated visualizers, while a low score indicated verbalizers.

The VVIQ test scoring was self-explanatory as established by Marks (1973); totals were summed accordingly. A high score indicated a low visualizer, while a low score indicated a high visualizer.

All dependent variable ratings were scored on a six-point scale, each variable receiving a mean score number.

SUBJECTS

Subjects were drawn by a convenience sample from 487 undergraduate introductory psychology, marketing, and history students from Youngstown State University. Since gender was not an independent variable, students consisted of a natural mixture of both genders. Using undergraduate classes for the sample universe may at times limit the external validity of the experimental findings; nevertheless, participants within this study required only the ability to form attitudes about the brand and the advertisement. Youngstown State University's student population consists of many older students not found in the typical 18-22 year old age bracket found in most undergraduate universities. This population may make the sample more generalizable to broader populations. The imagery instruction group had 247 students assigned, while 240 students were assigned the no imagery instructions. Half of each of these two groups were shown the Model condition of the advertising content variable, while the other half viewed the No Model portion of this independent variable. After the experiment was executed, 86 subjects were cate-

gorized in the Visualizer group, and 97 people were placed in the Verbalizer condition of the imaging potential variable based on their scores from the VVQ. Subsequently, the sample size became $n=183$. Thirteen questionnaires were discarded due to incomplete responses.

QUESTIONNAIRE

The questionnaire used in the procedure and listed in Appendix E contained several different portions. The first set of questions were taken from the Verbalizer Visualizer Questionnaire (Richardson, 1977) which categorized participants into verbalizers/visualizers of the imagery potential variable. A 15-20% criterion range designated verbalizers as those scoring in the lowest 15%-20% of the total scores and visualizers as those scoring in the highest 15%-20% of the total scores. This study incorporated Richardson's guidelines for the two groupings.

The subjects assigned to the Model or No Model condition of the advertising content variable were shown one of the appropriate slides. The Model condition contained a Hewlett-Packard advertisement with both males and females interacting with the computer. The No Model condition, the advertisement with the personal computer alone, pictured a large detailed view of the Hewlett-Packard instrument. Both advertisements were color photographs.

The dependent variable ratings of brand attitude were taken from the Rossiter and Percy (1978) study and adjusted to a six-point measure. The attitude toward the advertisement variable was borrowed from Mitchell and Olson (1981) and Mitchell (1986), again adjusting it to a six-point scale. The behavioral intention measure was also taken from Mitchell and Olson (1981) and Mitchell's (1986) studies keeping it consistent with the six-point scale.

The final set of questions on the questionnaire, which occupied the last five pages was taken from the VVIQ (Marks, 1973). The instructions were partially deleted to mask the true intent of the experiment. The VVIQ's purpose was to measure any difference in scores on the test between the imagery treatment groups.

The final open-ended question asked participants for their impression of the experiment in order to determine subject awareness of true intent.

The entire questionnaire was structured, whereby all responses were forced choice true/false or answers demanding a marked item response.

The questionnaire was disguised--it did not reveal the true intent of the experiment; thereby, the experimenter indicated at the outset that it was a marketing project studying evaluations of Hewlett-Packard ads.

ANALYSIS OF DATA

When identifying and measuring the various sources of variation within a collection of data, the statistical technique of analysis of variance is used. The ANOVA, as it is called, is the best choice to employ if interest lies in uncovering variables that are related in a perhaps complex manner rather than in a simple linear way. Since this study used a factorial design structure, the ANOVA was applicable.

A one-way ANOVA was chosen as the statistical test in order to determine whether two or more sample means differed when analyzing main effect variation.

The SPSS analysis of variance was used for the entire analysis of data. The factorial analyses were executed having unequal cell frequencies thereby creating a nonorthogonal design. Since the sample sizes were disproportional, the various sources of variability in the design were not independent of each other.

According to the SPSS package:

If the frequencies in each cell are not equal but are proportional to the marginal frequencies of each factor, only the main effects are still orthogonal. However, interaction effects will not in general be independent of the main effects, and the effects of higher-order interactions will not in general be independent of the effects of lower-order interactions. (SPSS Manual, p. 400)

Hence, a hierarchial stepdown analysis using the Option 10 card was used within the procedure.

For each separate independent variable, means were calculated within the one-way ANOVA which produced sum of squares, mean square, and the F factor with the accompanying significance level for the between-groups and within-groups variation. These main effects were analyzed for the three independent variables. The level of significance was set at 0.05 for all statistical tests.

A two-way and three-way ANOVA were performed on the combination of all the independent variables in order to study possible interaction effects. Means were calculated within the two-way and three-way ANOVA. The ANOVA produced sum of squares, mean square, and the F factor with the accompanying significance level for the between-groups and within-groups variation. Main effects and interactions were analyzed.

A Pearson Product Moment Correlation statistic was executed using SPSS on the imagining instructions variable and the VVIQ test. The correlation was performed in order to analyze any relationship between the test and the predictor variable.

V. RESULTS

Statistical analyses using ANOVA were performed on the three independent variables: Imagining Instructions (Imagery Treatment), Imaging Potential (VVQ Selector), and Advertising Content (Model Treatment).

IMAGERY TREATMENT

Ho: There is no difference in brand attitude between the imagery and no imagery treatment.

A One-Way ANOVA was performed on the brand attitude scores of the visualizers and verbalizers in the imagery treatment variable. The level of significance for the test was set at 0.05. The total sample size in this condition was 183; 92 people received imagery instructions and 91 people received no instructions. The value for the F-Test was 15.036, and the level of significance was 0.000. The mean for brand attitude in imagery treatment was 3.63, while the mean in the no imagery treatment was 3.04. The null hypothesis was rejected, and the alternate hypothesis was accepted that there is a difference in the brand attitude means between the imagery and no imagery treatment.

Ho: There is no difference in attitude toward the advertisement (Aad) between the imagery and no imagery treatment.

A One-Way ANOVA was performed on the attitude toward the advertisement scores of the verbalizers and visualizers in the imagery treatment variable. The level of significance for the test was set at 0.05. The total sample size in this condition was 183; 92 people received imagining instructions and 91 people received no instructions. The value for the F-Test was 15.620, and the level of significance was 0.000. The mean for Aad in the imagery treatment condition was 3.62, while the mean in the no imagery treatment was 2.96. The null hypothesis was rejected, and the alternate hypothesis was accepted that there is a difference in attitude toward the advertisement (Aad) scores between imagery and no imagery treatment.

Ho: There is no difference in behavioral intention between the imagery and no imagery treatment.

A One-Way ANOVA was performed on the behavioral intention of verbalizers and visualizers in the imagery treatment variable. The level of significance for the test was set at

0.05. The total sample size was 183; 92 people received imagery instructions and 91 people received no instructions. The value for the F-Test was 7.822, and the level of significance was 0.006. The mean for behavioral intention in imagery treatment was 3.02, while the mean in no imagery treatment was 2.48. The null hypothesis was rejected, and the alternate hypothesis was accepted that there is a difference in behavioral intention between imagery and no imagery treatment.

MODEL TREATMENT

Ho: There is no difference in brand attitude between the model and the no model treatment.

A One-Way ANOVA was performed on the brand attitude scores of the visualizers and verbalizers in the model treatment variable. The level of significance for the test was set at 0.05. The total sample size was 183; 94 people received the model treatment, while 89 people received the no model treatment. The value for the F-Test was 8.903, and the level of significance was 0.003. The mean for brand attitude in the model treatment was 3.56, while the no model treatment was 3.10. The null hypothesis was rejected, and

the alternate hypothesis was accepted that there is a difference in brand attitude between model and no model treatment.

Ho: There is no difference in attitude toward the advertisement ratings between the model and no model treatment.

A One-Way ANOVA was performed on the advertisement attitude scores of the verbalizers and visualizers in the model treatment variable. The level of significance for the test was set at 0.05. The total sample size was 183; 94 people received the model treatment and 89 people received no model treatment. The value for the F-Test was 10.966, and the level of significance was 0.001. The mean for Aad in the model treatment was 3.56, while the no model treatment was 3.01. The null hypothesis was rejected, and the alternate hypothesis was accepted that there is a difference in attitude toward the advertisement between model and no model treatment.

Ho: There is no difference in behavioral intention between the model and no model treatment.

A One-Way ANOVA was performed on the behavioral intention scores of the verbalizers and visualizers in the model treatment variable. The level of significance for the test was set at 0.05. Total sample size was 183; 94 people received the model treatment and 89 people received no model treatment. The value for the F-Test was 0.629, and the level of significance was 0.429. The mean for behavioral intention was 2.83 in the model treatment, while the no model treatment was 2.67. The null hypothesis was not rejected that there is no difference in behavioral intention between the model and no model treatment.

VVQ SELECTOR

Ho: The VVQ selector has no effect on brand attitude.

A One-Way ANOVA was performed on the brand attitude scores of the verbalizers and visualizers in the VVQ selector variable. The level of significance for the test was set at 0.05. The total sample size was 183; 97 people composed the verbalizers and 86 comprised the visualizers. The value for the F-Test was 0.256, and the level of significance was 0.614. The mean for brand attitude in the VVQ selector condition was 3.37 for verbalizers and 3.29 for

visualizers. The null hypothesis was not rejected in that the VVQ selector has no effect on brand attitude.

Ho: The VVQ selector has no effect on attitude toward the advertisement (Aad).

A One-Way ANOVA was performed on the attitude toward the advertisement scores of the verbalizers and visualizers in the VVQ selector variable. The level of significance for the test was set at 0.05. The total sample size was 183; 97 people composed the verbalizers and 86 people were designated as visualizers. The value for the F-Test was 0.012, and the level of significance was 0.914. The mean for attitude toward the advertisement in the verbalizers was 3.28 and 3.30 in the visualizers. The null hypothesis was not rejected in that the VVQ selector has no effect on attitude toward the advertisement.

Ho: The VVQ selector has no effect on behavioral intentions.

A One-Way ANOVA was performed on the behavioral intention scores of the verbalizers and visualizers in the VVQ selector variable. The level of significance for the test

was set at 0.05. The total sample size was 183; 97 people consisted of the verbalizers and 86 people consisted of the visualizers. The value for the F -Test was 1.287, and the level of significance was 0.258. The mean for behavioral intention for verbalizers was 2.65 and 2.87 for visualizers. The null hypothesis was not rejected in that the VVQ selector has no effect on behavioral intentions.

IMAGERY TREATMENT AND MODEL TREATMENT INTERACTION

BRAND ATTITUDE

Ho: Imagery treatment and model treatment have no effect on brand attitude.

A 2 x 2 ANOVA was performed on the brand attitude scores of the participants. The brand attitude scores were analyzed in terms of the imagery treatment and the model treatment conditions. The level of significance was set at 0.05. Table 5.1 presents the sum of squares, mean square, value of F , and level of significance of F for the 2 x 2 ANOVA of the brand attitude scores. The mean for brand attitude for imagery treatment was 3.63, and the mean for no imagery treatment was 3.04. The mean for brand attitude in the model treatment was 3.56 and in the no model treatment was 3.10.

The main effects of imagery and model treatments were both significant. The interaction was not significant between the imagery treatment and model treatment conditions of the brand attitude scores. The interaction mean was 3.92.

The null hypothesis is not rejected in that there is no effect on brand attitude by imagery treatment and model treatment.

TABLE 5.1
2 x 2 ANOVA FOR BRAND ATTITUDE OF
IMAGERY TREATMENT AND MODEL TREATMENT INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Main Effects	26.543	13.271	13.059	0.000
Imagery	16.742	16.742	16.475	0.000
Model	10.509	10.509	10.341	0.002
Two-Way Interaction Imagery by Model	0.589	0.589	0.579	0.448

ATTITUDE TOWARD THE ADVERTISEMENT

Ho: Imagery treatment and model treatment have no effect on attitude toward the advertisement (Aad).

A 2 x 2 ANOVA was performed on the attitude toward the advertisement scores of the participants. The Aad scores were analyzed in terms of the imagery treatment and the model treatment conditions. The level of significance was set at 0.05. Table 5.2 presents the sum of squares, mean square, value of F , and level of significance of F for the 2 x 2 ANOVA of the Aad scores. The mean for Aad in imagery treatment was 3.62 and the mean for no imagery treatment was 2.96. The mean in the model treatment was 3.56 and the mean in the no model treatment was 3.01.

The main effects of imagery and model treatments were both significant. The interaction, however, was not significant between the imagery treatment and model treatment conditions in the attitude toward advertisement scores. The interaction mean was 3.99. The null hypothesis is not rejected in that there is no effect on attitude toward the advertisement by imagery treatment and model treatment.

TABLE 5.2

2 x 2 ANOVA FOR ATTITUDE TOWARD ADVERTISEMENTS OF
IMAGERY TREATMENT AND MODEL TREATMENT INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Main Effects	35.004	17.502	14.711	0.000
Imagery	19.809	19.809	16.650	0.000
Model	15.195	15.195	12.772	0.000
Two-Way Interaction Imagery by Model	1.391	1.391	1.169	0.281

BEHAVIORAL INTENTION

Ho: Imagery treatment and model treatment have no effect on behavioral intention.

A 2 x 2 ANOVA was performed on the behavioral intention scores of the participants. The behavioral intention scores were analyzed in terms of the imagery treatment and the model treatment conditions. The level of significance was set at 0.05. Table 5.3 presents the sum of squares, mean square, value of F, and level of significance of F for the 2 x 2 ANOVA of the behavioral intention scores. The mean for behavioral intention in the imagery treatment was 3.02

and the mean in the no imagery treatment was 2.48. The mean in the model treatment was 2.83 and the mean in the no model treatment was 2.67.

The main effect of imagery was significant, albeit, the main effect of model treatment was not. Although close, the interaction was not significant between the imagery treatment and model treatment conditions in the behavioral intention scores. The interaction mean was 3.28. The null hypothesis is not rejected in that there is no effect on behavioral intention by imagery treatment and model treatment.

TABLE 5.3

2 x 2 ANOVA FOR BEHAVIORAL INTENTIONS OF
IMAGERY TREATMENT AND MODEL TREATMENT INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Main Effects	14.581	7.291	4.355	0.014
Imagery	13.253	13.253	7.917	0.005
Model	1.329	1.329	0.794	0.374
Two Way Interaction Imagery by Model	5.713	5.713	3.413	0.066

IMAGERY TREATMENT AND VVQ SELECTOR INTERACTION

BRAND ATTITUDE

Ho: Imagery treatment and VVQ selector have no effect on brand attitude.

A 2 x 2 ANOVA was performed on the brand attitude scores of the participants. The brand attitude scores were analyzed in terms of the imagery treatment and the VVQ selector conditions. The level of significance was set at 0.05. Table 5.4 presents the sum of squares, mean square, value of F , and level of significance of F for the 2 x 2 ANOVA of the brand attitude scores. The mean for brand attitude of the imagery treatment was 3.63 and 3.04 in the no imagery treatment. The mean for the verbalizers was 3.37 and the mean for the visualizers was 3.29. The main effect of imagery treatment was significant, while the main effect of VVQ selector was not significant. The interaction was not significant between the imagery treatment and the VVQ selector conditions in the brand attitude scores. The interaction mean was 3.58 for the verbalizers and 3.68 for the visualizers. The null hypothesis is not rejected in that there is no effect on brand attitude by imagery treatment and VVQ selector.

TABLE 5.4
2 x 2 ANOVA FOR BRAND ATTITUDE OF
IMAGERY TREATMENT AND VVQ SELECTOR INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Main Effects	16.223	8.111	7.581	0.001
Imagery	15.928	15.928	14.887	0.000
VVQ	0.189	0.189	0.177	0.675
Two-Way Interaction Imagery by VVQ	1.306	1.306	1.221	0.271

ATTITUDE TOWARD THE ADVERTISEMENT

H₀: Imagery treatment and VVQ selector have no effect on attitude toward the advertisement (Aad).

A 2 x 2 ANOVA was performed on the attitude toward the advertisement scores of the participants. The Aad scores were analyzed in terms of the imagery treatment and the VVQ selector conditions. The level of significance was set at 0.05. Table 5.5 presents the sum of squares, mean square, value of F, and level of significance of F for the 2 x 2 ANOVA of the attitude toward the advertisement scores. The mean for Aad in the imagery treatment was 3.62 and the mean

in no imagery treatment was 2.96. The mean in the VVQ selector for verbalizers was 3.28 and 3.30 for the visualizers. The main effect of imagery treatment was significant, while the main effect of VVQ selector was not significant. The interaction was not significant between the imagery treatment and the VVQ selector conditions in the attitude toward the advertisement scores. The interaction mean was 3.55. The null hypothesis is not rejected in that there is no effect on attitude toward the advertisement by imagery treatment and VVQ selector.

TABLE 5.5

2 x 2 ANOVA FOR ATTITUDE TOWARD ADVERTISEMENTS OF
IMAGERY TREATMENT AND VVQ SELECTOR INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Main Effects	19.870	9.935	7.766	0.001
Imagery	19.854	19.854	15.520	0.000
VVQ	0.061	0.061	0.048	0.827
Two-Way Interaction Imagery by VVQ	0.502	0.502	0.392	0.532

BEHAVIORAL INTENTION

Ho: Imagery treatment and VVQ selector have no effect on behavioral intention.

A 2 x 2 ANOVA was performed on the behavioral intention scores of the participants. The behavioral intention scores were analyzed in terms of the imagery treatment and the VVQ selector conditions. The level of significance was set at 0.05. Table 5.6 presents the sum of squares, mean square, value of F , and the level of significance of F for the 2 x 2 ANOVA of the behavioral intention scores. The mean for behavioral intention in imagery treatment was 3.02, while the mean for no imagery treatment was 2.48. The mean for the VVQ selector in the verbalizers was 2.65 and the mean in the visualizers was 2.87. The main effect of imagery treatment was significant, but the main effect of VVQ selector was not significant. The interaction is not significant between the imagery treatment and the VVQ selector conditions in the behavioral intention scores. The interaction mean was 2.84 for the verbalizers and 3.24 for the visualizers. The null hypothesis is not rejected in that there is no effect on behavioral intention by imagery treatment and the VVQ selector.

TABLE 5.6

2 x 2 ANOVA FOR BEHAVIORAL INTENTIONS OF
IMAGERY TREATMENT AND VVQ SELECTOR INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Main Effects	15.819	7.910	4.674	0.011
Imagery	13.560	13.560	8.013	0.005
VVQ	2.566	2.566	1.516	0.220
Two-Way Interaction Imagery by VVQ	1.182	1.182	0.698	0.404

MODEL TREATMENT AND VVQ SELECTOR INTERACTION

BRAND ATTITUDE

H₀: Model treatment and VVQ selector have no effect on brand attitude.

A 2 x 2 ANOVA was performed on the brand attitude scores of the participants. The brand attitude scores were analyzed in terms of the model treatment and the VVQ selector conditions. The level of significance was set at 0.05. Table 5.7 presents the sum of squares, mean square, value of F, and level of significance of F for the 2 x 2 ANOVA of the brand attitude scores. The mean for brand attitude in

the model treatment was 3.56, while the mean in the no model treatment was 3.10. The mean for the VVQ selector in the verbalizers was 3.37, while the mean in the visualizers was 3.29. The main effect of model treatment was significant, while the main effect of VVQ selector was not significant. The interaction was not significant between the model treatment and the VVQ selector conditions in the brand attitude scores. The interaction mean was 3.55 for the verbalizers and 3.57 for the visualizers. The null hypothesis is not rejected in that there is no effect on brand attitude by model treatment and VVQ selector.

TABLE 5.7

2 x 2 ANOVA FOR BRAND ATTITUDE OF
MODEL TREATMENT AND VVQ SELECTOR INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Main Effects	10.160	5.080	4.584	0.011
Model	9.865	9.865	8.903	0.003
VVQ	0.360	0.360	0.325	0.570
Two-Way Interaction Model by VVQ	0.528	0.528	0.476	0.491

ATTITUDE TOWARD THE ADVERTISEMENT

Ho: Model treatment and VVQ selector have no effect on attitude toward the advertisement (Aad).

A 2 x 2 ANOVA was performed on the attitude toward the advertisement scores of the participants. The Aad scores were analyzed in terms of the model treatment and the VVQ selector conditions. The level of significance was set at 0.05. Table 5.8 presents the sum of squares, mean square, value of F, and level of significance of F for the 2 x 2 ANOVA of the attitude toward the advertisement scores. The mean for Aad was 3.56 in the model treatment and 3.01 in the no model treatment. The mean for the VVQ selector in the verbalizers was 3.28 and 3.30 in the visualizers.

The main effect of model treatment was significant, although the main effect of VVQ selector was not significant. The interaction was not significant between the model treatment and the VVQ selector condition in the Aad scores. The interaction mean was 3.47 for the verbalizers and 3.66 for the visualizers. The null hypothesis is not rejected in that there is no effect on attitude toward the advertisement (Aad) by the model treatment and VVQ selector.

TABLE 5.8

2 x 2 ANOVA FOR ATTITUDE TOWARDS ADVERTISEMENTS OF
MODEL TREATMENT AND VVQ SELECTOR INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Main Effects	14.249	7.124	5.460	0.005
Model	14.232	14.232	10.907	0.001
VVQ	0.003	0.003	0.003	0.959
Two-Way Interaction Model by VVQ	1.530	1.530	1.172	0.280

BEHAVIORAL INTENTION

Ho: Model treatment and VVQ selector have no effect on behavioral intention.

A 2 x 2 ANOVA was performed on the behavioral intention scores of the participants. The behavioral intention scores were analyzed in terms of the model treatment and the VVQ selector conditions. The level of significance was set at 0.05. Table 5.9 presents the sum of squares, mean square, value of F, and level of significance of F for the 2 x 2 ANOVA of the behavioral intention scores. The mean for behavioral intention in the model treatment was 2.83 and

2.67 in the no model treatment. The mean for the VVQ selector was 2.65 in the verbalizers and 2.87 in the visualizers.

The main effects of model treatment and VVQ selector were not significant. No relationship existed between the model treatment and the VVQ selector condition of the behavioral intention scores. The interaction mean was 2.61 for the verbalizers and 3.07 for the visualizers. The null hypothesis is not rejected in that there is no effect on behavioral intention by the model treatment and VVQ selector.

TABLE 5.9

2 x 2 ANOVA FOR BEHAVIORAL INTENTIONS OF
MODEL TREATMENT AND VVQ SELECTOR INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Main Effects	3.310	1.655	0.944	0.391
Model	1.051	1.051	0.599	0.440
VVQ	2.203	2.203	1.256	0.264
Two-Way Interaction Model by VVQ	2.660	2.660	1.516	0.220

IMAGERY, MODEL, AND VVQ SELECTOR INTERACTION

BRAND ATTITUDE

Ho: Imagery, model, and VVQ treatment variables have no effect on brand attitude.

A 2 x 2 x 2 ANOVA was performed on the brand attitude scores of the participants. The brand attitude scores were analyzed in terms of the imagery treatment, model treatment and VVQ selector variables. The level of significance was set at 0.05. Table 5.10 presents the sum of squares, mean square, value of F , and level of significance of F for the 2 x 2 x 2 ANOVA of the brand attitude scores. The mean for brand attitude in the imagery treatment was 3.63 and 3.04 in the no imagery treatment. The mean in the model treatment was 3.56 and 3.10 in the no model treatment. The mean for the VVQ selector in the verbalizers was 3.37, while the mean for visualizers was 3.29.

The main effects of imagery and model treatments were both significant, while the main effect of VVQ selector was not significant. No relationship was found between the interaction of the variables in the brand attitude scores. The interaction mean between model treatment, imagery treat-

ment, and VVQ selector for verbalizers was 3.83. The interaction mean between model treatment, imagery treatment, and visualizers was 4.02. Therefore, the null hypothesis is not rejected in that there is no effect on brand attitude by imagery, model and VVQ interactions.

TABLE 5.10
2 x 2 x 2 ANOVA FOR BRAND ATTITUDE OF
IMAGERY, MODEL, AND VVQ INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Three-Way Interaction Imagery by Model by VVQ	0.007	0.007	0.007	0.932

ATTITUDE TOWARD THE ADVERTISEMENT

H₀: Imagery, model and VVQ variables have no effect on attitude toward the advertisement (Aad).

A 2 x 2 x 2 ANOVA was performed on the Aad scores of the participants. The Aad scores were analyzed in terms of the imagery, model, and VVQ variables. The level of significance was set at 0.05. Table 5.11 presents the sum of squares, mean square, value of F, and level of significance of F for the 2 x 2 x 2 ANOVA of the Aad scores. The mean

for Aad in the imagery treatment was 3.62 and 2.96 in the no imagery treatment. The mean in the model treatment was 3.56 and 3.01 in the no model treatment. The mean for the VVQ selector in the verbalizers was 3.28, while the visualizers was 3.30.

The main effects of imagery and model treatments were both significant, while the main effect of the VVQ selector condition was not significant. No significance was found between the interaction of the variables in the Aad scores. The interaction mean for Aad in the imagery treatment, model treatment, and VVQ selector for verbalizers was 3.89. The interaction mean in the imagery treatment, model treatment, and VVQ selector for visualizers was 4.11. The null hypothesis is not rejected in that there is no effect on attitude toward the advertisement by imagery, model, and VVQ variables.

TABLE 5.11

2 x 2 x 2 ANOVA FOR ATTITUDE TOWARD ADVERTISEMENTS OF
IMAGERY, MODEL, AND VVQ INTERACTION

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Three-Way Interaction Imagery by Model by VVQ	0.125	0.125	0.104	0.748

BEHAVIORAL INTENTION

Ho: Imagery, model and VVQ variables have no effect on behavioral intentions.

A 2 x 2 x 2 ANOVA was performed on the behavioral intention scores of the participants. The behavioral intention scores were analyzed in terms of the imagery, model and VVQ conditions. The level of significance was set at 0.05. Table 5.12 presents the sum of squares, mean square, value of F, and level of significance of F for the 2 x 2 x 2 ANOVA of the behavioral intention scores. The mean for behavioral intentions of imagery treatment was 3.02 and 2.48 for no imagery treatment. The mean for model treatment was 2.83 and 2.67 for no model treatment. The mean for VVQ selector in the verbalizers was 2.65 and in the visualizers was 2.87.

The main effect of imagery treatment was significant, however, the main effects of model treatment and VVQ selector variables were not significant. The interactions were not significant between any of the three variables on the behavioral intention rating. The interaction mean for behavioral intentions in the imagery treatment, model treatment, and VVQ selector in the verbalizers was 2.96. The interac-

tion mean for the visualizers was 3.64. The null hypothesis is not rejected in that there is no effect on behavioral intention by imagery, model, and VVQ interactions.

TABLE 5.12

2 x 2 x 2 ANOVA FOR BEHAVIORAL INTENTIONS OF
IMAGERY, MODEL, AND VVQ INTERACTIONS

Source of Variation	Sum of Squares	Mean Square	F	Significance of F
Three-Way Interaction Imagery by VVQ by Model	0.184	0.184	0.110	0.741

MEASUREMENT OF IMAGINING INSTRUCTIONS

A Pearson Product-Moment Correlation Coefficient was run on the imagining treatment scores and the VVIQ scores. The level of significance for the test was set at 0.05. The sample size was 183. The value for r was 0.2646, and the level of significance was 0.000. The null hypothesis is rejected and the alternate hypothesis is accepted that there is a correlation between the imagery treatment and VVIQ scores. The correlation, nevertheless, was extremely low in a positive direction.

DEMAND CHARACTERISTICS

After completing the last questionnaire, the subjects were asked to write down their thoughts concerning the purpose of the experiment. An analysis of these statements indicated that none of the subjects guessed the true purpose of the study.

VI. DISCUSSION

The results of this study provided a better understanding of the role of imagery instructions within an advertising context. The present study offered clear support for the presence of an imagery effect, and independently, for the model effect on the measurement of brand attitude and attitude toward the advertisements.

CONFIRMATION OF PRIOR FINDINGS

Visual imagery processing had been explored often in terms of the availability heuristic. Frequent events were typically easier to recall and to imagine than infrequent events. The processing of imagining instructions was explored successfully in terms of verbal nonpictorial stimuli within the work by Kisielius and Sternthal (1984). They provided evidence that a negative effect on brand attitude was observed with the manipulation of imagining instructions in the no picture advertisement condition. Judgments in the picture condition were not affected, however, by the manipulation of instructions to imagine. Although the stimulus material was nonpictorial, the significant results by Kisielius and Sternthal (1984) were reaffirmed by the first hypothesis of the current study. The hypothesis stated that imagery treatment created a difference in brand attitude means.

The series of studies by Gregory, et al. (1982) using self-relevant scenarios and instructions to imagine increased behavioral intentions to use a public service. The current research findings that imagining instructions produced a difference in behavioral intention ratings supported Gregory, et al. (1982).

Interactive advertisements, positively evaluated and depicting people using products, were the key characteristics of the model treatment variable. Although not interactive in nature, the positively affect-laden photographs in Mitchell's (1986) study had an effect on brand attitudes, with negatively evaluated ones causing less favorable attitudes. Because of the inclusion of interactive stimulus materials, the current study lends credence, but cannot fully support Mitchell's (1986) experiment that the model treatment created a difference in attitude means. The same reasoning applied to the hypothesis examining the model treatment variables measuring Aad. Mitchell (1986) discovered that valenced photographs have a strong effect on attitude toward the advertisement. However, the current study using valenced photographs showing an interaction between people and the product, again, cannot fully substantiate Mitchell's finding on Aad.

Wright (1979) concluded that interactive visuals with

T.V. stimuli produced a short-term increase in behavioral intention and overt product usage. Wright's (1979) findings were reaffirmed by the current study's results that concern the difference in behavioral intent to use the product between the model and no model conditions.

The VVQ selector consisted of the application of the VVQ test in order to determine the imaging potential of the subjects. Prior research using the VVQ to assess imaging abilities stemmed from Rossiter and Percy (1978). The present research could not provide backup to Rossiter and Percy's (1978) conclusions that the VVQ selector had an effect on brand attitude.

Expanding the manipulation of imagining instructions to pictorial and non-pictorial stimuli, Slee (1978) found a significant interaction on memory recall between imagery instructions and individual imagery ability when using verbal concrete nouns. Within Slee's (1978) second experiment using pictures as stimuli, the results were not significant. It must be clarified that Slee's (1978) procedures did not corroborate the current study's hypothesis due to the differing dependent variable measures. The interactions of the independent variables were not significant in the current study.

NEW FINDINGS

Instructions to Imagine

Brand Attitude

While Kisielius and Sternthal (1984) were not able to obtain significance in the picture condition by the manipulation of instructions to imagine, the current study found main effect significance for the imagining instructions for both picture stimulus materials. The means for the main effect between the imagery and no imagery treatment on brand attitude were 3.63 and 3.04, respectively. What is important to reflect here is the conclusion drawn by Kisielius and Sternthal (1984)--a vividness effect on judgment existed supporting the availability-valence hypothesis. According to this hypothesis, judgment depends on the favorableness of the information available in memory. Pictorial and verbal presentations are vivid only to the extent that they evoke cognitive elaboration of stimulus-relevant information in memory. They discussed the non-significance of imagining instructions on pictures in terms of the expectation that these instructions induced less favorable judgments than the absence of instructions. "One explanation for the fact that this effect did not occur is that the processing of the pictorial information required most, if not all, of subjects'

cognitive resources" (Kisielius & Sternthal, 1984, p. 58). Informative to the current study was that instructions to image using pictures did produce favorable attitudes over the non-imagery condition. In light of the Kisielius and Sternthal (1984, 1986) research, the availability-valence hypothesis does not apply in its original form. If this assumption is correct, that in effect, the hypothesis does not apply, then the processing of pictorial information may not require most, if not all, of the subjects' cognitive resources. In other words, the use of pictures as a factor to induce cognitive elaboration may now be in question.

Attitude Toward the Ad

Imagining instructions produced a main effect of higher attitude toward the advertisement means than the no imagery treatment, thus supporting the current study's hypothesis. The major issue was whether the presentation of instructions to imagine had an effect on the total advertisement. While other studies examined imagining instructions on other variables, no other study looked at Aad. The essence of the current study was to focus on attitudinal responses for the entire advertisement, rather than searching for any relationships between Aad and brand attitudes that Mitchell (1986) had performed. The mean for Aad from imagining

instructions was significantly higher at 3.62 than the mean of 2.96 for no imagining instructions.

Behavioral Intention

Intent to use the product was higher under conditions of imagining instructions than under no imagery treatment. Supporting the current hypothesis, the mean for behavioral intention from imagining instructions was significantly higher at 3.02 than the mean of 2.48 from no imagining instructions. Success on the significance for these results may have been due to the creation of explicit delineated instructions to imagine; embedded instructions possibly caused the weak effect on behavioral intention in the experiment by Wright and Rip (1980).

Supporting the current experimental hypothesis, imagining instructions acted to strengthen the functional role that imagery played in increasing the effectiveness of advertising. By increasing the favorableness of brand attitude, imagery instructions has far more support as a means of producing positive advertising efficacy. The scope of imagery instructions as a method to induce mental imagery can hold provocative implications for advertising practice. If higher brand attitudes, attitude toward ads, and actual intent to use the product can be generated by hearing and

reading instructions to imagine, then the role of imagining can be explored to useful ends within the magazine advertisement medium.

Advertising Content

Brand Attitude

While other studies have looked at affect-laden photographs (Mitchell & Olson, 1981; Mitchell, 1986) when measuring brand attitude, no other study measured the brand attitude ratings of interactive people-product visuals. The results of the current study found a difference in the brand attitude means between the model and no model treatment. These results emphasized that interactive pictures, positively evaluated and depicting people using advertised products, will produce higher brand attitude scores than advertisements without people. The latter advertisements were neutrally evaluated. The mean for brand attitude from the model treatment was significantly higher at 3.56 than the mean of 3.10 from no model treatment.

Attitude Toward the Advertisement

Again, no study examined Aad scores when manipulating interactive visual stimuli. Positively affect-laden visual advertisements produced higher Aad ratings than neutral pho-

tos with no people. The results supported the hypothesis that pictorial items which are in obvious interaction produced greater attitudinal evaluations. The mean for Aad due to the model treatment was significantly higher at 3.56 than the mean for model treatment at 3.01.

Applications are widespread concerning the implications toward magazine advertising. Furthermore, pictures with people interacting as opposed to "no people" in the ad could be used more successfully to a much greater extent in order to produce higher attitude ratings.

Behavioral Intentions

While Wright (1979) examined joint verbal-visual interactive actions with the product within the T.V. medium, this current study measured behavioral intention within the print media. No statistical significance was found on the main effect of the model treatment for behavioral intention measures within the current study. The mean for behavioral intention from the model treatment was not significant at 2.83, while the mean for no model treatment was 2.67. Speculations concerning this lack of significance may add to the various studies in social psychology that cast doubt on the AWARENESS → ATTITUDES → BEHAVIOR linkage, (Organ & Bateman, 1986). There are established psychological mecha-

nisms which can act in the opposite direction--with behavior actually affecting attitudes. Our behavior impels our feelings only to the extent that the behavior cannot be justified independently of our beliefs and attitudes. Attitudes and behavior are often discrepant in that many different attitudes are relevant to a single action. In respect to the current results, behavioral intention to use the product was quite independent from brand attitude within the individual situation of viewing interactive model pictures. In the situation of receiving imagery instructions, the behavioral intention response produced greater intention scores consistent with the attitudinal ratings.

Imaging Potential (VVQ Selector)

Brand Attitude

Lack of significance was found on the measurement of brand attitude for the VVQ selector (The mean for brand attitude from the verbalizers was 3.37, the visualizer mean was 3.29). The conclusions to be drawn concerning the non-significance of the individual imagery potential variable do not coincide with the Paivio (1971) paradigm. If visual imagery processing was the mediator involved across stimulus materials, the lack of mutual consistency was not shown within the VVQ selector of the current study. Although

Rossiter and Percy (1978) were able to obtain significance in their research, the current study cannot support the hypothesis. Reasons for not achieving significance in this dependent variable and in the other measures of Aad and behavioral intention stem from several factors. The first is that the current study used inferential statistics of analysis of variance to analyze the data, as opposed to Rossiter and Percy's (1978) regression coefficient measures. Second, subjects selected from the original theorists' experiment were adult consumers taken from a Midwestern shopping center, while the current study obtained undergraduates from an urban university.

Finally, variances in means could not be compared due to a lack of disclosure of means from Rossiter and Percy's (1978) work. Their report of F-values within regression analysis implied their use of a "correlated-scores analysis of variance", as opposed to this study's simple analysis of variance. Without delving into all the methodological problems of the "correlated ANOVA", one factor affecting results is using matched subjects rather than having the same subject participate in all treatment conditions. Rossiter and Percy (1978) did not match subjects which may have caused them to achieve significant results. The current research used different subjects in each cell and

analyzed data with the simple ANOVA which did not reach significance. Therefore, F-values could not be compared directly.

Attitude Toward the Advertisement

While other studies have measured brand attitude (Rossiter & Percy, 1978), eye movements (Richardson, 1977), and memory recall (Slee, 1978) in the manipulation of individual imagery potential, no study examined the dependent variable of Aad. The current research did not substantiate a difference in the Aad means (3.28, 3.30) between the verbalizers and the visualizers, respectively. The reasons for not achieving significance in this measure are the same for not reaching significance in the brand attitude measure.

Behavioral Intention

As in the case of the above hypothesis, previous researchers have described the use of various measurements of imaging potential; yet no one has researched behavioral intention in these terms. No significance was found between the intention means of the verbalizers (2.65) and the visualizers (2.87). The reasons for not achieving significance in this measure are the same for not reaching significance in the brand attitude measure.

Imagery Treatment and VVQ Selector Interaction

Slee (1978) had uncovered a significant interaction with imagery potential and imagining instruction variables in recall measurement for verbal stimulus materials. The results of the current study were not significant in all three dependent variable measurements. It was hoped that the current study's attitudinal measures, along with pictorial stimulus materials, would evoke a significant interaction. Nevertheless, these results implied that the interaction of imagery treatment and VVQ selector impeded the visual mental imagery processing action. This action increases recall and attitude formation.

Imagery Instructions and Model Treatment Interaction

It was hypothesized that the imagery instructions combined with the model treatment would create higher attitudinal and intent to use scores. The analysis found a lack of significance in all three dependent variable measurements for the imagery instructions and model treatment interaction. Rather than evoking a combined force to interact substantially, the interaction acted to negate the individual effects of each variable, thus resulting in non-significance.

Model Treatment and VVQ Selector Interaction

While previous researchers have not examined this interaction, the present study attempted to explore the interactive relationship between the model treatment and the VVQ selector on all three dependent variable measures. The means for the measures of the above interaction were not significant. The inability of the VVQ selector to pull forth any major effect produced this lack of significance.

Imagery Treatment, Model Treatment, and VVQ Selector Interaction

No significance was discovered on the three dependent variable measurements for the 2 x 2 x 2 interaction. The connotation for the lack of interaction for the 2 x 2 x 2 ANOVA is that the combination of any manipulated variable did not produce a strong enough effect to maintain significance.

PURPOSE OF VVIQ MEASURE

Finke (1980) had demonstrated that the processing of physical objects and images was functionally equivalent at many levels of the visual system. Instructions to image were considered to be a vividness manipulation within studies published by Kisielius and Sternthal (1986). Their findings were based on the vividness effect of the

availability-valence hypothesis which suggested that vividness can affect attitudinal judgments.

Unique to the present study, aside from the inclusion of advertising content as an independent variable, was the employment of an objective, direct "manipulation check" for imagery instruction receptiveness. Operationally measuring ongoing imagery activity is, however, difficult. Choice of the VVIQ as a direct measure of whether a person had imaged or not within the imagining instructions condition was based on the above studies. If indeed higher attitudes are evoked from more vividly presented material or images, then measurements of vividness should be employed. The VVIQ was chosen due to the conceptual content of vivid imagery assessment that the test possesses. Unfortunately, the correlation between the imagery treatment condition and the VVIQ was low ($r=0.2646$).

Albeit, Smith, Houston and Childers (1984) successfully measured vividness of imagery in recall experiments, the present study was unable to directly assess the efficacy of the manipulated imagining instructions.

SUMMARY

One conclusion that emerged from the evidence is that the same pattern of evaluation responses surfaced whether

imagining instructions or model treatment was used in measuring brand attitude and attitude toward the advertisement.

From the earliest research by Sheehan (1967), who reported that "vivid" imagers had higher recall scores, to that of Richardson (1977), the general trend produced higher recall ratings for those who were high visualizers. The same positive association was found with brand attitude reactions performed by Rossiter and Percy (1978). However, the lack of statistical significance was not found both in the main effects and in the interactions for the VVQ selector of the current study.

Brand Attitude

The results of this study provided a better understanding of visual imagery components in advertisements. First, the results indicated that brand attitude was affected by the inclusion of imagery instructions. Visual imagery processing may be at work when such instructions are present, further emphasizing its role in evoking vivid mental imagery.

Second, illustrations in magazines showing people interacting with the brand item influenced brand attitude to a much greater extent than non-interactive pictures. Both

of these components, then, individually have an effect on brand attitudes. Individual imagery potential was insignificant in respect to measures of attitude.

Attitude Toward the Advertisement

The study also found that this attitudinal measure also was affected by imagining instructions and by ad content containing interactive materials. As Mitchell (1986) had proven, the Aad was a separate construct from brand attitude. Also, the Aad was strongly influenced by the valence of the photograph used in the advertisements. Likewise, the current research provided evidence that positively evaluated interactive illustrations generated a greater effect on Aad. Imaging potential made no significant effect on Aad measures.

Behavioral Intentions

Only the imagining instructions supported a greater effect on behavioral intent to use the brand item. The interactive model advertisement and individual imagery potential condition could not confirm any significant intention to use the brand. Individuals who viewed interactive magazine ads did not exhibit any significant intent to use the brand, although those subjects receiving imagining instructions have generated such an intent.

Measurement of Imagining Instructions

While vivid imagery measures are scarce, the VVIQ test did not correlate highly with the imagining instruction condition. The study was not able to claim any direct assessment of vivid mental imagery processing from the imagery treatment variable.

IMPLICATIONS OF THE STUDY

Former research in the field of imagining instructions focused on visual versus verbal material (Rossiter & Percy, 1978; Kisielius & Sternthal, 1984; and Slee, 1978). This study introduced a new angle of people-product interaction. It maintained the brand attitude measure but added the Aad measure from prior brand processing research studies (Mitchell & Olson, 1981).

The current study can reflect on the positive impact that imagining instructions and ads with people interacting can have on future advertising campaigns. As personal attitudes seem quite amenable to mental visualization, research on the antecedents of action imagery should be interesting. An imaginal episode of innovative action planning may be an important goal for a mass media behavioral change campaign.

Finally, the experiment resorted to personal computers shown within the magazine illustrations as the choice of a

high involvement product. Generalizations can be made to other durable product decisions that also demand high involvement. Advertising that involves user interactive photographs can be encouraging news to the personal computer industry in order to increase brand attitude and attitudes toward advertisements. Recently, the emphasis in marketing computers has been on the general purpose, communicative role that they play. Picturing the computer working with people within the advertisement would act to enhance this communicative aspect.

IMPLICATIONS FOR FURTHER RESEARCH

Additional research needs to be directed at other methods of directly measuring the manipulation of imagining instructions. If indeed an objective test, as the VVIQ, is uncorrelated with imagery instructional use, then possibly the protocol analysis technique used by Wright and Rip (1980) could be extended to differentiate those responses established by each imagery treatment group.

An important issue that could be examined in this study would be another design structure that fits the Advertising-Response Model (Rossiter & Percy, 1978). The stimulus materials suited for this type of design would consist of the same photograph of an advertisement with (1) a

large picture bearing smaller copy print and brand name, and (2) a small picture bearing larger copy print and brand name. Both of these ads would appear in each condition of the imagining instruction variable and in the advertising content variable. In this way, the dual processing mode of verbal and visual precedent response paths would be analyzed.

A study should be conducted to also determine how visual imagining instructions and advertising content variables fare within the context of another medium such as television. If indeed subjects were told and read the directions to imagine themselves in a situation, then the combined effect of auditory and highly visual stimuli on the screen may create a highly positive significant interaction on attitudinal ratings.

Another possible research project may be to add another dimension to the advertising content variable. Already the model treatment was contingent upon a positive affective rating and of a people/product interaction. What may be interesting is to expand the design to a "favorable vs. neutral" ad along an "interactive/non-interactive" continuum. In other words, a favorably rated ad could be interactive or noninteractive. These four conditions could then be fitted into the same imagery structure of the

current study in order to assess any potential differences between an affect-laden photograph and an interactive one.

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APPENDIX A

TABLE 1.1

ADVERTISING VOLUME BY MEDIA
(In Millions of Dollars)

Media	1978	1979	1980	1981	1982	1983	1984	1985	1986	E1987
Newspaper	12,214	13,863	14,794	16,528	17,694	20,582	23,522	25,170	26,940	28,585
National	1,541	1,770	1,963	2,259	2,452	2,734	3,081	3,352	3,485	3,621
Local	10,673	12,093	12,831	14,269	15,242	17,848	20,441	21,818	23,455	24,964
Magazines	2,597	2,932	3,149	3,533	3,710	4,233	4,932	5,155	5,360	5,649
Television	8,955	10,154	11,366	12,650	14,329	16,189	19,098	20,003	21,475	23,032
Network	3,975	4,599	5,130	5,575	6,210	7,017	8,526	8,285	8,535	9,005
Spot	2,607	2,873	3,269	3,730	4,360	4,827	5,488	6,004	6,485	6,937
Local	2,373	2,682	2,967	3,345	3,759	4,345	5,084	5,714	6,455	7,090
Radio	3,052	3,310	3,702	4,230	4,670	5,210	5,817	6,490	6,975	7,670
Network	147	161	183	230	255	296	320	365	430	469
Spot	620	665	779	879	923	1,038	1,197	1,335	1,350	1,444
Local	2,285	2,484	2,740	3,121	3,492	3,876	4,300	4,790	5,195	5,757
Direct Mail	5,987	6,653	7,596	8,944	10,319	11,795	13,800	15,500	17,205	18,930

E - Estimated

APPENDIX B

EVALUATION OF ADVERTISEMENTS

Please enter the last four digits of your Social Security Number:

INSTRUCTIONS:

You will be seeing a series of slides showing advertisements of personal computers that appeared in magazines. After each slide is presented, rate each of the illustrations in the advertisements on the six scales below. There are nine steps on each scale. Complete each scale by placing an "X" on the line that best represents how you feel about the illustration. Only one mark should be made on each of the six scales, but please check all six for each illustration that you see.

EXAMPLE:

When one looks at a picture of a coal mine, one might rate the coal mine in the following manner:

clean: __:__:__:__:__:__:__:__:__X__:dirty

like: __:__:__:__:__X__:__:__:__:__:dislike

large: __X__:__:__:__:__:__:__:__:small

ILLUSTRATION of advertisement ONE:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement TWO:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement THREE:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement FOUR:

good: __: __: __: __: __: __: __: __: __: bad
like: __: __: __: __: __: __: __: __: __: dislike
pleasant: __: __: __: __: __: __: __: __: __: unpleasant
favorable: __: __: __: __: __: __: __: __: __: unfavorable
active: __: __: __: __: __: __: __: __: __: passive
successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement FIVE:

good: __: __: __: __: __: __: __: __: __: bad
like: __: __: __: __: __: __: __: __: __: dislike
pleasant: __: __: __: __: __: __: __: __: __: unpleasant
favorable: __: __: __: __: __: __: __: __: __: unfavorable
active: __: __: __: __: __: __: __: __: __: passive
successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement SIX:

good: __: __: __: __: __: __: __: __: __: bad
like: __: __: __: __: __: __: __: __: __: dislike
pleasant: __: __: __: __: __: __: __: __: __: unpleasant
favorable: __: __: __: __: __: __: __: __: __: unfavorable
active: __: __: __: __: __: __: __: __: __: passive
successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement SEVEN:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement EIGHT:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement NINE:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement TEN:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement ELEVEN:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement TWELVE:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

ILLUSTRATION of advertisement THIRTEEN:

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

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

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

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

active: ___: ___: ___: ___: ___: ___: ___: ___: ___: passive

successful: ___: ___: ___: ___: ___: ___: ___: ___: ___: unsuccessful

ILLUSTRATION of advertisement FOURTEEN:

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

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

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

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

active: ___: ___: ___: ___: ___: ___: ___: ___: ___: passive

successful: ___: ___: ___: ___: ___: ___: ___: ___: ___: unsuccessful

ILLUSTRATION of advertisement FIFTEEN:

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

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

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

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

active: ___: ___: ___: ___: ___: ___: ___: ___: ___: passive

successful: ___: ___: ___: ___: ___: ___: ___: ___: ___: unsuccessful

ILLUSTRATION of advertisement SIXTEEN:

good: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: bad

like: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: dislike

pleasant: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: unpleasant

favorable: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: unfavorable

active: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: passive

successful: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: unsuccessful

ILLUSTRATION of advertisement SEVENTEEN:

good: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: bad

like: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: dislike

pleasant: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: unpleasant

favorable: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: unfavorable

active: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: passive

successful: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: unsuccessful

ILLUSTRATION of advertisement EIGHTEEN:

good: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: bad

like: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: dislike

pleasant: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: unpleasant

favorable: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: unfavorable

active: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: passive

successful: __:__: __:__: __:__: __:__: __:__: __:__: __:__: __:__: unsuccessful

ILLUSTRATION of advertisement NINETEEN:

good: __: __: __: __: __: __: __: __: __: bad

like: __: __: __: __: __: __: __: __: __: dislike

pleasant: __: __: __: __: __: __: __: __: __: unpleasant

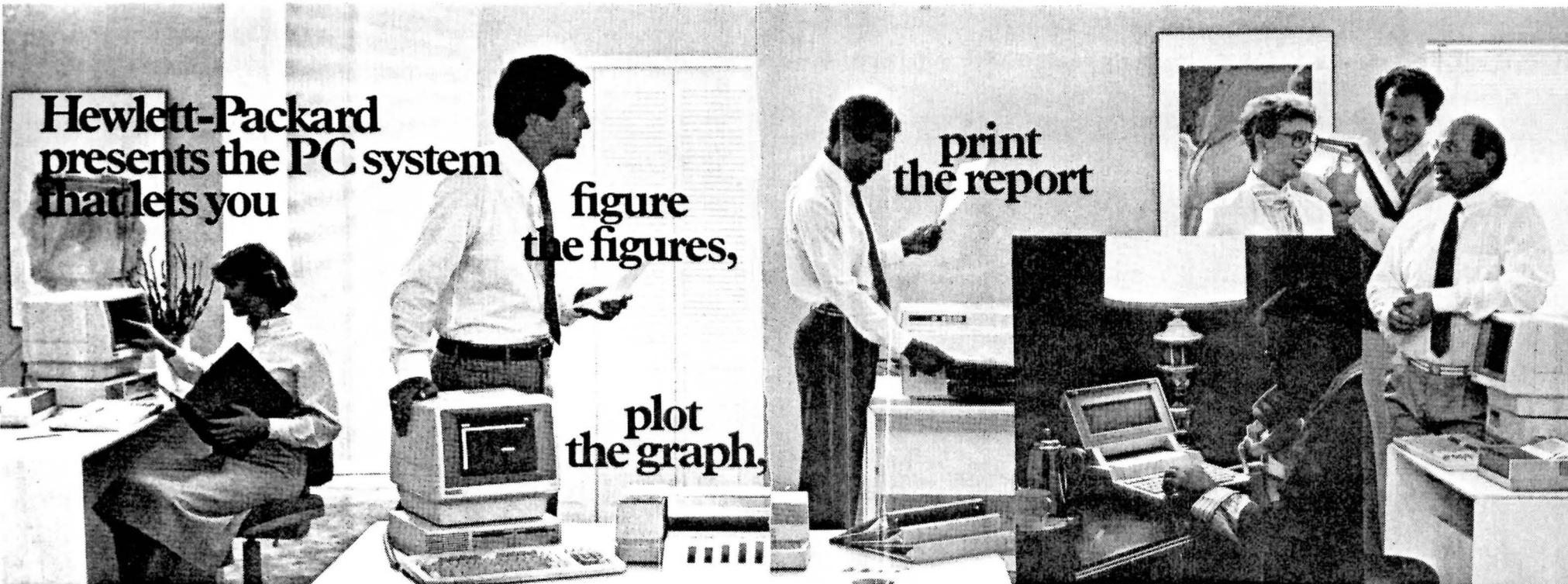
favorable: __: __: __: __: __: __: __: __: __: unfavorable

active: __: __: __: __: __: __: __: __: __: passive

successful: __: __: __: __: __: __: __: __: __: unsuccessful

Thank you very much for completing this questionnaire.

APPENDIX C



**Hewlett-Packard
presents the PC system
that lets you**

**figure
the figures,**

**plot
the graph,**

**print
the report**

**and when you get to your hotel,
change everything.**

The key word in that long, drawn-out headline is system.

A system built for PCs.

At Hewlett-Packard, it's a quality system of personal computers, printers, plotters, a truckload of software, and Local Area Network (LAN) capability.

It's all matched and designed to work brilliantly together.

Yet the system is so flexible each part can stand alone. Or even team with an IBM PC.

So you can build just the system you want.

It all starts with two of our Hewlett-Packard personal computers.

We call one the HP Touchscreen and the other (because it can do even more) the HP Touchscreen MAX.

The first comes with two double-sided disc drives. And each micro-floppy disc gives you nearly twice the standard formatted power of an IBM PC.

The HP Touchscreen MAX has even more capacity with the added power of a 14.8M byte Winchester disc drive.

Even if you don't speak computerese, you should be impressed. That's a lot of power.

As the names imply, you can actually change things on either screen just by touching the screen.

That makes the Touchscreen PCs easier to use. And a lot easier to learn.

The system also includes two printer many people think are simply the best around.

Our Hewlett-Packard LaserJet and ThinkJet printers are both breathtakingly fast and refreshingly quiet.

The ThinkJet printer runs at a rapid 150 characters per second.

Yet because the ThinkJet paints each character with a small jet of ink (instead of smashing the paper with keys), it's as quiet as a sigh.

At 300 characters per second, our LaserJet printer is even faster.

Ten times faster than the best daisy-wheel printers. Yet the image is as sharp as you'll get from a printing press.

Amazing.

Two different plotters are also part of the HP personal computer system.

Both create full-color graphics. One with two pens, the other with six for even more detail.

If you like, the system can be knitted together through a LAN.

It lets a number of HP personal computers link up, talk to each other, share printers, and exchange information.

By the way, there can be a lot of information to exchange. That's because there are more than 500 business software titles available. For word processing, accounting, spread sheets and graphics. You'll find the big names there, too. 1-2-3™ from Lotus.® *WordStar.™ **MicroPlan.™***

And the whole catalogue of software from HP.

Finally, when you travel, you can take the system with you.

Hewlett-Packard's portable personal computer turns your hotel room (or your den at home, or your customer's desk) into another part of your personal computer system.

The Portable has all the capacity of many desk-top PCs: 272K bytes of RAM and 384K bytes of ROM. And with its built-in modem, it can link up with your office printers and plotters. Not bad for a computer that weighs just nine pounds and can fit into a briefcase.

The system is all linked up, all on the same programs, all designed to work together, all ready to go.

And all from Hewlett-Packard.

Just dial 800-FOR-HPPC, toll free, to find the name of your nearest Hewlett-Packard dealer.

 **HEWLETT
PACKARD**

CIRCLE 109

APPENDIX D

**IT'S A SMALL MIRACLE HOW HEWLETT-PACKARD
PUT 656K OF MEMORY, LOTUS 1-2-3, WORD
PROCESSING, A TELECOMMUNICATIONS MODEM
AND COMPLETE IBM CONNECTABILITY INTO**



THE PORTABLE.

For years business people had to choose between the power of a desktop computer and the limited capabilities of the first portables. That problem was solved when Hewlett-Packard introduced The Portable.

The Portable is designed with more total memory than most leading desktop personal computers...656K in fact. That includes 272K of user memory. So, The Portable's built-in business software can work with enormous amounts of data.

1-2-3™ from Lotus, America's most popular spreadsheet, file management and business graphics program, is permanently built into The Portable. So is Hewlett-Packard's word processing program, MemoMaker. Just press the key and you're ready to work.

The Portable even has a built-in modem and easy-to-use telecommunications software to send

or receive data using a standard telephone jack.

If you use a Hewlett-Packard Touchscreen PC, IBM® PC, XT or an IBM compatible you'll be glad to know that your desktop and The Portable can talk to each other with the simple addition of the Hewlett-Packard Portable-Desktop Link.

The Portable's rechargeable battery gives you 16 hours of continuous usage on every charge.

Finally, you can work comfortably on a full size keyboard and an easy-to-read 16-line by 80-column screen. And it all folds shut to turn The Portable into a simple nine-pound box.

The Portable. A small miracle...perhaps. But then consider where it came from.

See The Portable and the entire family of personal computers, software and peripherals at your authorized Hewlett-Packard dealer. Call (800) FOR-HPCC for the dealer nearest you.

Setting You Free

**hp HEWLETT
PACKARD**

APPENDIX E

IM

EVALUATION OF ADVERTISEMENTS

Please enter the last four digits of your Social Security number:

— — — —

INTRODUCTION

Hewlett-Packard in Palo Alto, California is the largest and most diversified producer of electronic instruments in the world. Incorporated in California August 18, 1947, the company is a major designer and manufacturer of precision electronic equipment for measurement, analysis, and computation. Heavily research oriented, Hewlett-Packard makes more than 10,000 products which are sold worldwide and have broad application in the fields of science, engineering, business, industry, medicine, and education. High demand for informational data has created principal product categories including computers and computer systems, electronic calculators and computer/calculator peripheral products, test and measuring instrumentation and solid-state components, medical electronic equipment, and instrumentation for chemical analysis. The continuing recovery of the computer industry will aid this \$7 billion company as new product introductions are made into the product line.

Instructions:

The aim of this exercise is to determine the style or manner you use when carrying out different mental tasks. Your answers to the questions should reflect the manner in which you typically engage in each of the tasks mentioned. There are no right or wrong answers, I only ask that you provide honest and accurate answers. Please answer each question by circling either a "true" or "false".

For example, if I provided the statement, " I seldom read books," and this was your typical behavior, even though you might read say one book a year, you would circle the "true" response.

<u>ITEM</u>	<u>RESPONSE</u>	
	TRUE	FALSE
1. I enjoy doing work that requires the use of words.	1	2
2. My daydreams are sometimes so vivid I feel as though I actually experience the scene.	1	2
3. I enjoy learning new words.	1	2
4. I can easily think of synonyms for words.	1	2
5. My powers of imagination are higher than average.	1	2
6. I seldom daydream.	1	2
7. I read rather slowly.	1	2
8. I cannot generate a mental picture of a friend's face when I close my eyes.	1	2
9. I don't believe that anyone can think in terms of mental pictures.	1	2
10. I prefer to read instructions about how to do something rather than have someone show me.	1	2
11. My dreams are extremely vivid.	1	2
12. I have better than average fluency in using words.	1	2
13. My daydreams are rather indistinct and hazy.	1	2
14. I spend very little time attempting to increase my vocabulary.	1	2
15. My thinking often consists of mental pictures or images.	1	2

Instructions

You will be seeing a slide showing an advertisement of a Hewlett-Packard personal computer that has appeared in magazines. After the slide is presented, evaluate the advertisement on the 9 scales below. There are six steps on each scale. Complete each scale by placing an "X" on the line that best represents how you feel about the question. Only ONE mark should be made on each of the 9 scales, but please check all 9 for each ad that you see.

As the ad is presented, please try to construct a mental picture or image of the advertisement. In other words, imagine yourself in the situation presented in the advertisement.

EXAMPLE:

When one looks at an advertisement for Pepsi, one's attitude toward the brand might be:

UNPLEASANT ___: X: ___: ___: ___: ___ PLEASANT

Rate your attitude toward the brand (Hewlett-Packard) for the advertisement:

BAD ___: ___: ___: ___: ___: ___ GOOD

INFERIOR ___: ___: ___: ___: ___: ___ SUPERIOR

UNPLEASANT ___: ___: ___: ___: ___: ___ PLEASANT

UNINTERESTING ___: ___: ___: ___: ___: ___ INTERESTING

Rate your attitude toward the advertisement in its entirety:

DISLIKE ___: ___: ___: ___: ___: ___ LIKE

IRRITATING ___: ___: ___: ___: ___: ___ NOT IRRITATING

BAD ___: ___: ___: ___: ___: ___ GOOD

UNINTERESTING ___: ___: ___: ___: ___: ___ INTERESTING

My intent to use Hewlett-Packard personal computers:

NOT AT ALL LIKELY TO USE ___: ___: ___: ___: ___: ___ VERY LIKELY TO USE

INSTRUCTIONS

Circle your answer for each item. Before you turn to the items on the next page, familiarize yourself with the different categories on the rating scale. Throughout the test, refer to the rating scale when judging the vividness of each item. A copy of the rating scale will be printed on each page. Please do not turn to the next page until you have completed the items on the page you are doing and do not look back to check on other items you have done. Complete each page before moving on to the next page. Try to do each item separately independent of how you may have done other items.

Rating Scale

<u>Description</u>	<u>Rating</u>
Perfectly clear and as vivid as normal vision	1
Clear and reasonably vivid	2
Moderately clear and vivid	3
Vague and dim	4
No image at all, you only know that you are thinking of the object	5

An example of an item would be one which asked you to consider an image which comes to your mind's eye of a red apple. If your mental picture was "Moderately clear and vivid," you would circle the rating scale as follows:

<u>Item</u>	<u>Rating</u>				
red apple	1	2	3	4	5

~~When you are instructed to do so, turn to the next page and rate each item.~~

The image aroused by this item is:

<u>Description</u>	<u>Rating</u>
Perfectly clear and as vivid as normal vision	1
Clear and reasonably vivid	2
Moderately clear and vivid	3
Vague and dim	4
No image at all, you only know that you are thinking of the object	5

For items 1-4 think of some relative or friend whom you frequently see (but who is not with you at present) and consider carefully the picture that comes before your mind's eye.

<u>ITEM</u>	<u>RATING</u>				
1. The exact contour of face, head, shoulders and body	1	2	3	4	5
2. Characteristic poses of head, attitudes of body, etc.	1	2	3	4	5
3. The precise carriage, length of step, etc., in walking	1	2	3	4	5
4. The different colors worn in some familiar clothes	1	2	3	4	5

<u>Description</u>	<u>Rating</u>
Perfectly clear and as vivid as normal vision	1
Clear and reasonably vivid	2
Moderately clear and vivid	3
Vague and dim	4
No image at all, you only know that you are thinking of the object	5

For items 5-8, visualize a rising sun. Consider carefully the picture that comes before your mind's eye.

<u>Item</u>	<u>Rating</u>				
5. The sun is rising above the horizon into a hazy sky	1	2	3	4	5
6. The sky clears and surrounds the sun with blueness	1	2	3	4	5
7. Clouds. A storm blows up, with flashes of lighting	1	2	3	4	5
8. A rainbow appears	1	2	3	4	5

<u>Description</u>	<u>Rating</u>
Perfectly clear and as vivid as normal vision	1
Clear and reasonably vivid	2
Moderately clear and vivid	3
Vague and dim	4
No image at all, you only know that you are thinking of the object	5

For items 9-12, think of the front of a shop which you often go to. Consider the picture that comes before your mind's eye.

<u>Item</u>	<u>Rating</u>				
9. The overall appearance of the shop from the opposite side of the road	1	2	3	4	5
10. A window display including colors, shapes and details of individual items for sale	1	2	3	4	5
11. You are near the entrance. The color, shape and details of the door	1	2	3	4	5
12. You enter the shop and go to the counter. The counter assistant serves you. Money changes hands.	1	2	3	4	5

<u>Description</u>	<u>Rating</u>
Perfectly clear and as vivid as normal vision	1
Clear and reasonably vivid	2
Moderately clear and vivid	3
Vague and dim	4
No image at all, you only know that you are thinking of the object	5

For items 13-16, think of a country scene which involves trees, mountains and a lake. Consider the picture that comes before your mind's eye.

<u>Item</u>	<u>Rating</u>				
13. The contours of the landscape	1	2	3	4	5
14. The color and shape of the trees	1	2	3	4	5
15. The color and shape of the lake	1	2	3	4	5
16. A strong wind blows on the trees and on the lake causing waves	1	2	3	4	5

On the back of this page, please write down your thoughts concerning the purpose of the experiment. What did you think it was all about?

Thank you for taking the time to participate in this experiment.

APPENDIX F:RESULTS OF MARKETING RESEARCH THESIS

Prior research on imagery in advertising indicated that instructions to imagine produced a negative brand attitude rating in advertisements without pictures, while judgments in the picture condition were not affected by the manipulation of instructions to image.

The purpose of this experiment was to test a direct measurement of imagery instructions on visualizing and verbalizing individuals using an advertisement with and without people interacting with the product. Each student was categorized as a verbalizer or visualizer according to the initial set of questions. In addition, each student saw the personal computer advertisement either with or without people present in the ad. Half of the participants were given either a set of instructions to imagine themselves in the situation of the advertisement while the other half did not. Measurements of brand attitude, attitude towards the advertisement, and intention to use the product were taken.

RESULTS

The manipulation of imagining instructions as a variable proved to be statistically significant, along with the mani-

pulation of the advertisement's content of the effect of brand attitude and attitude towards the advertisement ratings.

Those students who were told to "imagine themselves in the situation" pictured in the slide scored higher on brand attitude ratings and attitude towards the advertisement ratings. They also showed higher scores for intention to use the Hewlett Packard personal computer.

Next, students who were shown the slide of the personal computer with people interacting had higher brand attitude scores plus higher attitude towards the ad scores than those individuals viewing only the "boring" Hewlett Packard PC by itself. "Intention To Use" scores were not significant.

Third, students scoring as visualizers were no different statistically than those scoring as verbalizers on measures of brand attitude, attitude towards the ad, and intent to use the product.

Finally, there were no interactions--meaning that combinations of the slide along with the imagining instructions did not produce significantly higher scores on brand attitude, attitude toward the advertisements, or intentions to use the product measures.

The current study can reflect on the positive impact that imagining instructions and ads with people interacting

can have on future advertising campaigns. If higher brand attitudes, general attitude towards ads along with actual intent to use the product can be generated by hearing and reading instructions to imagine, then the role of imagining can be explored to useful ends within magazine advertisements. Furthermore, pictures with people interacting as opposed to "no people" in the ad could be used more successfully to a greater extent to produce higher attitude ratings.

Again, much gratitude for participating in my project.

Thank you
Kristen Fletcher