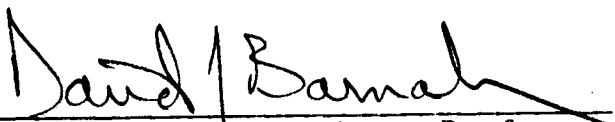
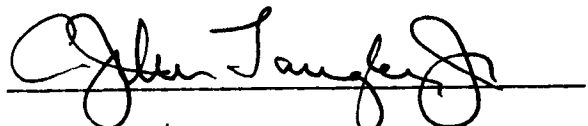
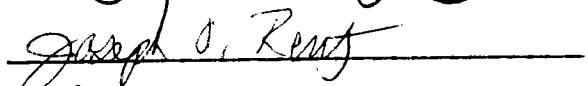
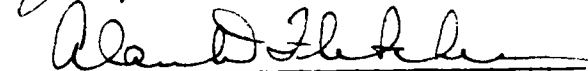


To the Graduate Council:

I am submitting herewith a dissertation written by Mary Wurst Werner entitled "The Effectiveness of Vicarious Learning in Advertising." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Business Administration.


David J. Barnaby, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:


Vice Provost
and Dean of The Graduate School

Y

THE EFFECTIVENESS OF
VICARIOUS LEARNING
IN ADVERTISING

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Mary Wurst Werner

December 1985

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DEDICATION

To my husband, Joseph W. Werner; father, Charles Wurst;
mother, Margaret Wurst; and brother, John Wurst.

ACKNOWLEDGMENTS

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ABSTRACT

Vicarious learning, or demonstration of the operation of a product (or service) is used extensively in advertising commercials. This study addresses the effectiveness of that particular technique.

Two commercials were produced, one with vicarious learning (demonstration of automatic teller machine operation) and one without vicarious learning (a strictly informative commercial with no demonstration). A Solomon four group design was used on a sample of 187 University of Tennessee undergraduate business majors. The students viewed the commercial on a videoplayer attached to a T.V. in front of the classroom. Approximately half of the sample was exposed to the commercial with vicarious learning and approximately half was exposed to the commercial without vicarious learning.

Measurements were obtained via questionnaires on attention paid to the commercial, comprehension/learning of the process to operate the automatic teller machine, retention of the commercial, ability to operate the automatic teller machine (ATM), level of involvement with the ATM, different situations in which the student would use the ATM, and intent to purchase a teller card. These are all components of a model representing the operation of vicarious learning.

Attention level was high for all groups, but was not significantly higher for the groups with vicarious learning. Comprehension/learning of the operation of an automatic teller machine appears to be affected by the fact a commercial is viewed not due to vicarious learning. Retention of the process does not appear to be enhanced with the use of vicarious learning. Ability to imitate the process of operation of an ATM appears to be enhanced by viewing a commercial; vicarious learning does not appear to have an affect. Neither level of involvement or use situation were affected by vicarious learning. In addition, intent to purchase was not affected by vicarious learning.

The results do not present much support for the use of vicarious learning in advertising. It is possible the results reflect the fact only a single exposure was provided, and that the effect of vicarious learning as a superior method for use in advertising commercials would come through with several exposures.

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CHAPTER I

BACKGROUND AND STATEMENT

OF THE PROBLEM

Introduction

Marketers are characteristically interested in any method available to influence behavior. Traditionally, consumer behavior is the area that addresses the process of influencing behavior. However, recently one of the more well developed areas of psychology is suggested as a possibility for supplying theoretical direction as a means of influencing behavior with possibilities for application in marketing (Nord and Peter, 1980). The broad area referred to is behavior modification. The specific type of behavior modification to be examined in this study is vicarious learning.

Vicarious learning (often referred to as modeling) is a type of behavior modification based on the stimulus response model in psychology. The entire area of behavior modification concentrates on influencing behavior by modifying the external environment. Practitioners of behavior modification accept a participant (subject) with all the internal (cognitive) processes as "given." Change in behavior is accomplished by modification of the external environment. This

is a new way of thinking for marketers who are more accustomed to the area of consumer behavior where influence on behavior is accomplished through the internal or cognitive processes.

Vicarious learning involves the modification of behavior through the learning process. The participant observes a model being positively (or negatively) reinforced for certain actions. Imitative behavior on the part of the participant is expected as a result of observing the model and consequences following the model's actions. This method of learning is used constantly in advertising. When a person (the model) uses perfume and attracts a member of the opposite sex (positive consequence), the advertiser hopes that the audience will follow suit and use the same perfume. In fact, one typical night spent viewing television will make it very apparent that this learning technique is used quite extensively in commercials. Therefore, it is probably assumed that there is extensive research in this area to lend credence to the use of this technique. However, an examination of the literature reveals that this is not the case. Although there appears to be a surge of recent interest on the topic, past research is all but totally absent.

The fact that past research is almost totally absent in this area is most surprising. It would seem

likely marketers would want to investigate a technique that is so useful in educating consumers about the use of a product or service they are unfamiliar with. This technique would seem especially useful for consumers of new products, particularly new products of a high technology nature that are becoming more common in the marketplace. The automatic teller machine is a good example of such a product. Although on the market for some years now, it represents a totally new concept in banking. Use of this product requires execution of behavior totally unrelated to the acquisition of banking services in the past. For such a product, the use of vicarious learning in advertising would seem a natural choice, if there were confidence in the use of this technique. In order to establish the necessary confidence in the use of vicarious learning in advertising, research confirming the effectiveness of the use of vicarious learning in advertising is necessary. This is the research problem that will be addressed in this study.

This section is designed to present an overview, in depth, of the area to be examined. To emphasize the significance of the study, an in-depth definition of behavior modification and history will be presented along with an examination of the theories and main processes of observational learning. Vicarious

learning will be defined precisely, and the relationship between vicarious learning and advertising will be established. This is a necessary step in order to utilize vicarious learning in the advertising process. Recent research in the area will be reviewed that will support the study's objective of examining the effectiveness of the use of vicarious learning in advertising. In order to place vicarious learning in a context more familiar to marketers, vicarious learning will then be examined in the context of and compared to consumer behavior. In the last section justifying the significance of the study, practical application of vicarious learning will be discussed in some depth.

The second (and last) major section of this introductory chapter will be a formal statement of the problem, which is to examine the effectiveness of vicarious learning in increasing purchase of the product (in this case, teller cards) advertised, and determine whether vicarious learning is effective in educating the consumer on correct product use.

Significance of the Study

Definition and History of Behavior Modification

In order to establish the importance of this study, the extensive and well documented area of behavior modification and its development in psychology will be

examined. The development of behavior modification is summarized here with the aid of Kazdin (1978) and Sherman (1973) who provide detailed descriptions of the development of behavior modification.

Behavior modification is often misunderstood. The perception of the general population is that there is unqualified control of one person's behavior by another. This kind of misunderstanding has led to fear about dealing with this area. These misperceptions are unfounded. Behavior modification, in the broadest sense, involves any method or means of influencing an individual to change his behavior. Note the individual is at liberty to change behavior or not, whatever the choice may be. Although a number of techniques such as physical coercion, psychosurgery, brainwashing, psychotherapy, and encounter groups are, in the strictest sense, considered behavior modification, as defined in psychology, these techniques do not qualify as behavior modification methods. Information which composes the body of knowledge upon which behavior modification techniques are based come from the area of psychology, specifically from the psychology of learning. The modification of behavior usually occurs through the modification of features in the individual's environment or social situation. Overt behavior is the concern of behavior modification rather than the inferred psychological forces that traditionally

have been assumed to underly it. The therapeutic focus is directed toward fostering socially appropriate behavior and eliminating inappropriate behavior. This is accomplished by rewarding desired behavior in accordance with the stimulus-response model. A stimulus prompts the desired response which is rewarded. In the case of behavior modification, alteration of the environment often serves as the stimulus which brings about the desired response. The response is then reinforced. Thus, behavior is altered or modified, with the use of the stimulus-response model. The methodological approach refers to a stance that emphasizes the empirical evaluation of treatment.

Behavior modification also has a tainted reputation in the minds of some because some procedures that are not truly behavior modification techniques are used to change behavior in the name of behavior modification. The techniques used in this manner are often not traceable to the area of psychology, specifically the psychology of learning and should not be classified as behavior modification techniques. This misuse of behavior modification has resulted in putting the discipline on the defense. Thus, due to both misperceptions of behavior modification, how it operates, and the labelling of techniques used to change behavior as behavior modification methods when they are truly not,

public opinion of behavior modification is often in error. As a result, studies are conducted periodically to determine public attitudes and opinions regarding behavior modification. This information is used to help correct any wrong impressions people might have.

Behavior modification was originally used as treatment for one or more behavioral disorders. The treatment of abnormal behavior originally was derived from an intrapsychic-disease model that has been traced across interrelated areas of research and practice in psychiatry and clinical psychology. This is a theory that is based on the belief that abnormal behavior is a result of a medically oriented problem (mental illness). Treatment applied on the basis of this model proved generally unsuccessful. Not only was the treatment unsuccessful, but many of the aspects of the disordered behavior pointed to the importance of the social environment instead of mental illness. People began to realize perhaps changes in the environment would be effective in correcting abnormal behavior. This way of thinking was supported by observing that social variables such as having a job, living with other individuals, and undertaking responsibilities for others determined the success of staying in the community (Kazdin, 1978).

In the early 1900's, enough empirical evidence began to accumulate to support the behavioral model based

on psychology rather than the more medically oriented areas of knowledge. This area of behavior modification as it emerges has a substantial amount of empirical evidence to back up the theory. Perhaps this is due to the fact the area grew from a clinical setting where typically all knowledge is based on research.

John B. Watson is credited throughout the literature for insisting on the study of overt behavior and making the required methodological changes in psychology leading to behavior modification. Learning emerged as a central topic of interest and people like Thorndike, Guthrie, Tolman, Hull and Mowrer studied and contributed to learning theory with a behavior modification slant. However, Skinner developed operant conditioning and classified the difference between respondent and operant conditioning and is credited with giving behavior modification its true beginning (respondent is classical conditioning, i.e. Pavlov's dog; operant would be teaching a dog to sit in order to get food). Skinner was responsible for the shift in emphasis from respondent to operant conditioning to account for behavior.

Skinner established a relationship between behavior and environmental stimuli that created a foundation for research in the behavioral area. Laboratory research on operant conditioning with animals,

as Skinner had done, proliferated in the 1950's followed by experiments on humans. Many areas were pursued including schedules of reinforcement, punishment, avoidance, and related topics concerned with behavior and learning. This led to the birth of the Journal of the Experimental Analysis of Behavior which is devoted entirely to operant conditioning research. By the late 1950's and early 1960's, operant techniques and the use of the experiment to analyze behavior had been adopted for clinical and educational purposes (Kazdin, 1978 p. 233).

The area of behavior modification truly emerged when the knowledge from years of extensive experimental research was applied in a clinical setting. The earliest applications of the various techniques involved treatment of disorders such as nervous habits, neuroses, and psychoses. Researchers had success with these new techniques based on the psychology of learning unlike the many failures of work done on the basis of the disease model. Watson, Rayner, and M. C. Jones performed work creating and eliminating fear in children, for example (Kazdin, 1978 p. 128-134). A number of therapeutic applications resulted from their work. Operant techniques were used on psychotic patients and in psychiatric wards to alter diverse behaviors. Many programs of research were founded in the early 1960's to

study the application of operant conditioning techniques. By the mid 1960's, operant techniques were applied extensively as a result of the development of so many programs of research. This movement separated applied behavior analysis from experimental research which supplied basic knowledge in earlier years for behavior modification.

The Journal of Applied Behavior Analysis appeared in 1968, marking a new era in the development of behavior modification (Kazdin, 1978 p. 201). There was now a broad enough base of knowledge formed from experimental research in earlier years to start seriously applying operant techniques. Applied behavior analysis is generally thought of as those techniques based on reinforcement, punishment, and extinction. Although the focus is on using these techniques on populations such as psychiatric patients, the mentally retarded, individuals in classroom settings, children in institutional settings, delinquents, adult offenders, drug addicts, alcoholics, and mental patients, there is evidence of a movement to apply the techniques to different populations as well.

After extensive development and concentration on the study of overt behavior, there has been some interest demonstrated in techniques that acknowledge cognitive processes in the area of behavior modifica-

tion. There seems to be some feeling that this is because the stimulus-response model upon which operant conditioning is based is viewed as a simplistic approach to learning, and that other processes must be responsible for behavior observed. The term "cognitive behavior modification" includes attempts to change behavior by altering thoughts, interpretations, assumptions, and strategies of responding. This area of knowledge evolved from research done by a number of investigators that have attributed specific psychological disorders to maladaptive or illogical thoughts, perceptions, and interpretations of reality. Cognitive behavior modification emerged partly because of the discovery of the influence of cognition in vicarious learning (Kazdin, 1978).

Many theorists have observed people exhibiting behaviors similar to those of a significant person in his life. This type of observation lead to the development of vicarious learning. Miller and Dollard researched several types of imitative learning (vicarious learning) that were formulated in learning theory terms. However, the real forerunner of vicarious learning is considered to be Bandura. He conducted extensive research in the area of vicarious learning and seems to be considered the expert in the field. He is responsible for identifying three basic ways in which observing someone else can

influence change in a person's behavior; teaching new patterns of behavior (or developing new responses), eliminating fears and response inhibitions, and facilitating preexisting behavior patterns (Sherman, 1973).

To summarize, behavior modification has expanded and developed considerably since its inception. Starting with a medical, disease-oriented approach to treatment of disorders, it eventually, through research and application, evolved to a different approach, one of concentrating on the changing of overt behavior for a solution. Successful application clinically of the various techniques that were developed led to wider application and support for more research in the area. This further led to curiosity about the involvement of the cognitive processes in the performance of overt behavior. It is from research investigating the cognitive process and their involvement that led to the development of the area of vicarious learning, one of the many types of behavior modification, and the subject of this study. The following theories were presented by Bandura (1969 p. 120-135), the man considered the forerunner of vicarious learning.

Theories of Observational Learning

In order to more fully understand how observational learning (vicarious learning) operates, an examination of appropriate theories is necessary. Several theories provide possible explanations for the observational method of learning. The basic theories of modeling will be examined with regard to their application in vicarious learning. These various theories suggest different approaches and methodology in the use of vicarious learning as a promotional tool for products and services.

Associative and classical conditioning theories. These theories account for the process of evoking responses already present as part of an individual's behavioral repertoire. They do not account for the process of developing a new response in the individual's behavioral pattern.

Reinforcement theories. Reinforcement as described by the various reinforcement theories in the observational learning process involves the observer seeing another party rewarded for certain behavioral actions. The development of these theories shifted the emphasis from classical conditioning to instrumental response. The process of reinforcement involves positive reward for imitative behavior based on modeling

influences. Miller and Dollard have conducted a number of experiments dealing with the concept of reinforcement and its relationship to observational learning. In their experiments, a leader was rewarded for correct imitative behaviors based on influence from a model. The observing subject was rewarded whenever he imitated the leader's behavior.

As a result of these experiments, Miller and Dollard found that the subjects were able to imitate and learn the types of behaviors demonstrated by the leader and generalize this behavior to new situations (Bandura, 1969 p. 121-123).

Skinner, perhaps the most well known and widely publicized behaviorist linked to the reinforcement theories, believes very strongly that reinforcement is a necessary condition for observational learning. Matching behavior should be positively reinforced and divergent responses should go either unrewarded or punished in Skinner's view (Bandura, 1969 p. 127).

Baer and Sherman developed the necessity of planned reinforcement. They believe there is an intrinsic form of reinforcement associated with matching behaviors in many instances, discounting the need for externally administered reinforcement (Bandura, 1969 p. 123-124).

The two basic hypotheses involving reinforcement differ with regard to the generalizability to new situations. The Secondary Reinforcement Hypothesis subscribes to the notion of a generous schedule of reinforcement for matching behaviors with the idea that such a schedule would lead to generalization of behavior in new situations. The Discrimination Hypothesis deems reinforcement as necessary for matching behavior, rewarded in a number of different situations. Generalization is assumed not to occur automatically, but must be built into the program.

Although reinforcement is accepted as a necessary part of the observational learning process, it seems there is some feeling among experts in the area that more complex variables are involved. The entire communication process which includes the encoding transformation and decoding of information is involved. Memory and the ability to transform behavior learned from the modeling cues into matched behavioral responses is another process worth considering. There is some feeling that understanding of the entire process of vicarious learning might be accomplished on a more complete scale by separating the process into a learning analysis and performance analysis.

Affective feedback theory. The affective feedback theory by Mowrer is similar to reinforcement in that there is reward for imitative behavior. However, in this situation, there is emphasis on the classical conditioning of positive and negative emotion accompanying reinforcement to stimuli arising from matching responses. In other words, there is emotional involvement in the reinforcement process. The observer of the modeling process is made aware of the model's satisfaction or discomforts as a result of particular actions. This, in turn, should produce imitative behavior on the part of the observer to obtain the same type of positive sensory feedback. Response performance is not a part of the process.

There is some question in the area of behavior modification as to the validity of affective feedback and whether it is a necessary part of the vicarious learning process. Some members of the discipline appear to feel affective feedback is unnecessary and that reinforcement without it is sufficient.

Contiguity-mediational theories. In this theoretical analysis of observational learning, representational mediators play an important role in the learning process. This type of theoretical analysis is applied to explain behavior that is acquired but not

overtly shown through means of a response. This type of learning is designated as "no-trial."

The modeling stimulus is distinguished as the mediator after the message has been coded into images or words for memory representation. Research has shown that there is an organization of behavioral elements into novel patterns resembling modeled responses. Supposedly these responses can occur at a central level without overt responding. The theory is based on the assumption that stimulus contiguity is necessary for observational learning.

From the above observations, it seems research into areas exposing support for the contiguity-media-tional theories are an attempt to delve into the inner workings of observational learning.

To summarize, these basic areas of theory development provide some insight into the operation of the process of observation learning. While some of the theories appear to overlap and delve into esoteric areas, they all have contributed substantially to the understanding and development of the vicarious learning area of behavior modification. The processes that occur allowing observational learning to take place as presented by Bandura (1969 p. 136-143) now will be examined.

Main Processes Affecting Quality of Observational Learning

With the basic theories of observational learning reviewed, attention should now turn to the examination of individual respondent characteristics. The observer (respondent) of the model performing actions exhibits four main processes that determine the effectiveness of the vicarious learning process. These four processes are attentional processes, retention processes, motor reproduction processes, incentive and motivational processes.

Attentional processes. Because a model exhibits certain types of behavior to be imitated, it does not guarantee that the observer will automatically be sensitive to the cues. Simple exposure to a demonstration does not guarantee learning. The observer needs to attend to, recognize or differentiate the distinctive features of the model's response.

A number of different model variables have been found to affect the level of attention the modeling influence will receive from the observer. Bandura (1969 p. 136) summarized some of these variables listing, among others, selectivity of modeling stimuli (intensity, size, vividness, and novelty) (Bandura, 1969 p. 136), acquired distinctiveness of model attributes (Miller and Dollard,

1941), use of experts (Mausner, 1953), status-conferring symbols (Lefkowitz, Blake and Mouton, 1955), age (Bandura and Kupers, 1964; Hicks, 1965; Jakubczak and Walters, 1959), sex (Bandura, Ross and Ross, 1963a; Maccoby and Wilson, 1957; Ofstad, 1967; Rosenblith, 1959, 1961) social powers (Bandura, Ross and Ross, 1963b; Mischel and Grusec, 1966), and ethnic status (Epstein, 1966).

Observer variables are also a determining factor in the attentional process. Bandura (1969 p. 137) summarized research done in this area citing observer variables that attention seems to vary with. Some of these include self-esteem (de Charms and Rosenbaum, 1960; Gelfand, 1962; Lesser and Abelson, 1959), level of competence (Kanareff and Lanzetta, 1960), and socio-economic and racial status (Beyer and May, 1968). Persons told in advance of forthcoming tests on the observations seem often to pay closer attention than otherwise.

Incentives have been very effective in controlling the attentional process of the observer and have been found to override the effects of variations in observer characteristics and model attributes.

Rate, number, distribution, and complexity of modeling stimuli affects attention span. The more easily understood the modeling influence is, the greater the

probability of a longer attention span (Bandura, 1969 p. 138).

The learning process is also a factor. The intelligence of the observer is, of course, important. Also to be considered are sensory-motor handicaps or faulty prior learning of the observer. In dealing with these learning situations, the observer's characteristics with regard to ability and prior learning experiences should be evaluated. Perhaps a pretraining program designed to facilitate maximum learning when exposed to the modeling influence would be in order.

Retention processes. Retention of the pattern of behavior illustrated by the model in vicarious learning is the key to the completion of the learning process. Rehearsal is a method often used in strengthening the retention process of the observer. Covert rehearsal has been shown to enhance the ability to retain behavioral responses. At the overt level, rehearsal also has been found to be satisfactory.

Other variables affecting the retention process are periodic reproduction of modeled segments, and the use of symbolic coding operations. Observers are more likely to remember behaviors they can easily code, classify, and organize into easily remembered schemes.

It is also helpful to present modeling cues in smaller units and at spaced intervals.

Motor reproduction processes. Motor reproduction processes involve the use of symbolic representations of modeled patterns. The modeled patterns are in the form of images and verbal contents to guide overt performances. For example, in teaching a child to talk, the child may be able to observe and retain the words he is taught, but might not be able to reproduce the sounds because of physical limitations.

This type of problem can also occur with respect to the modeling influence. An example might be a ballet instructor who is not able to actually demonstrate the steps to be followed. In this instance, imitation of the exact behavioral response can become quite difficult.

In this type of learning process where motor reproduction is necessary for proper learning of many techniques, it is often difficult to tell if the process has been complete if there are motor reproduction problems. If the problem is with the observer, it is difficult to tell if there has been learning at all. Responses will be at best incomplete. Should the problem be with the model, a communicative problem is experienced; but through observer responses, one can determine if a learning process has been completed.

The process being demonstrated is often difficult and involves use of motor reproduction processes. In this case, besides demonstration by the model, practice on the part of the observer is necessary. A good example would be sports games such as golf or tennis.

Therefore, the motor reproduction process is a key in the learning process. The motor reproduction process is also important for correct imitative behavior on the part of the observer.

Incentive and motivational processes. Despite the fact an individual may possess the ability and skills to complete the learning process, without motivation, chances are learning will never take place. Incentives are generally used to help stimulate the observer. The use of incentives to help motivate the individual is closely related to the attentional process. An observer with a longer attention span that is sensitive to more modeling cues has probably been motivated through the use of incentives.

All of the processes that have been examined can have an profound affect on learning when the modeling technique is used. Therefore, the model should be designed with the operation of these processes in mind.

Definition of Vicarious Learning

In order to more fully understand the vicarious learning process, the basic definition is reviewed and three types of influences that can be brought about through the use of vicarious learning will be enumerated and examined in depth.

Vicarious learning is more than one of the many types of behavior modification. It should be viewed as a process, one by which modeling is used to change a behavioral response or introduce a new behavioral response. As has already been illustrated, the terms vicarious learning and modeling are often used interchangeably.

There are three types of modeling or influences in the application of vicarious learning. Nord and Peter (1980 p. 40-41) summarized these three types according to Bandura (1969 p. 143-148). A new response can be created, certain behaviors already present in the individual's behavioral repertoire can be strengthened or weakened, and the model can help facilitate the occurrence of previously learned responses. These three types of influences are termed observational learning; each method has a particular name, which is new response patterns, inhibitory and disinhibitory responses, and response facilitation, respectively. Each method will be

described in detail, summarized in accordance with Bandura (1969).

New response patterns. Observational learning can be used to develop new response patterns, behaviors not already present in the individual's behavioral repertoire. New response patterns are developed within the individual by a gradual shaping process with the use of reinforcement under natural conditions in the environment. Therefore, in order to evoke new patterns of behavior in a more controlled learning process, the use of stimuli to evoke a response is necessary. The stimuli in the vicarious learning instance takes the form of a model. The reinforcement of correct imitative behavior is necessary to complete the process.

Prior contact with the situation or machine the observer is to learn from is helpful. It has also been found that greater performance gains are accomplished when the desired behavior is clearly specified than when it must be inferred from a few examples.

In general, it has been found that human beings, on the average, are capable of acquiring and retaining large integrated units of behavior with the use of vicarious learning methods. The rate and level of learning is governed by many factors often characteristic to the observer and model. These include attentional

processes, retention processes, motor reproduction processes, and incentive and motivational processes.

Bandura (1969 p. 148) has summarized behaviors that have been acquired vicariously. Some of these include stylistic response patterns (Bandura, Grusec and Menlove, 1966; Bandura, Ross and Ross, 1963b), distinctive models of aggressive behavior (Bandura, Ross and Ross, 1963a; Hicks, 1965; Kuhn, Madsen and Becker, 1967), dramatic play patterns (Marshall and Hahn, 1967), prosocial frustrating reactions (Chittenden, 1942). At an even higher level, people can acquire standards for self-reinforcement and self-evaluative responses (Bandura and Kupers, 1964; Bandura and Whalen, 1966; Bandura, Grusec and Menlove, 1967b), conceptual behavior (Flanders and Thistlethwaite, 1969; Reed, 1966), moral judgmental orientations (Bandura and McDonald, 1963), self-imposed delay of gratification patterns (Bandura and Mischel, 1965), linguistic structures (Lovass, 1966a) and distinctive phonetic variations in verbal behavior (Alyokrinskii, 1963; Hanlon, 1964).

Studies have indicated that generalized behavioral orientatives and principles for generating novel combinations of responses can be transmitted through the use of vicarious learning.

There is some question as to how soon after adopting the new response patterns in a learning

situation people should be asked to apply them in a more difficult social situation. One solution suggests people enact the newly acquired behaviors in progressively more difficult social situations.

Role enactment techniques specifically have been the most successful methods in inducing stable affective attitudinal changes. This has some definite implications for types of promotional techniques to be used for products and services.

Inhibitory and disinhibitory effects. This type of behavior modification involves the strengthening or weakening of well-learned response patterns. It is important to note these are response patterns already present in the behavioral repertoire of the individual. Note the difference between this method and response facilitation to be described next. In response facilitation the modeling cues are utilized to facilitate the expression of previously learned responses. There are no negative sanctions applied in response facilitation as there are with inhibitory and disinhibitory effects.

Punishment is used in this method of vicarious learning. Correct behavior is encouraged by punishing incorrect responses. Age, sex, socioeconomic status, social power, ethnic background, and intellectual and

vocational status have been found to be linked to the observers propensity to imitate prohibited acts (Bandura, 1969 p. 195).

Although punishment is an integral part of this process, some behaviorists feel the same effect can be accomplished by consistently reinforcing correct behavior so that the observer will avoid the incorrect response which could result in punishment.

Response facilitating effects of modeling influences. As mentioned above, response facilitation involves the facilitation of behaviors already present in the individual's behavioral repertoire. The model serves as a cue to stimulate the desired response. Punishment is not used in response facilitation.

Several studies both in the laboratory and the field have shown that response facilitation does work with the use of vicarious learning techniques. Examples of behaviors that have been successfully facilitated as summarized by Bandura (1969 p. 196) include volunteering one's services (Rosenbaum, 1956; Rosenbaum and Blake, 1955; Schacter and Hall, 1952), performing altruistic acts (Blake, Rosenbaum and Duryea, 1955; Bryan and Test, 1967; Harris, 1968; Rosenhan and White, 1967), pledging oneself to a course of social action (Blake, Mouton and Hain, 1956; Helsen, Blake, Mouton and Olmstead, 1956),

assisting persons in distress (Bryan and Test, 1967), seeking relevant information (Krumboltz and Thorensen, 1964; Krumboltz, Varenhorst and Thorensen, 1967), selecting certain types of foods (Duncker, 1938; Barnwell, 1966), activities (Madsen, 1968) or articles (Bandura, Ross and Ross, 1963b; Gelfand, 1962).

Most experiments involved the use of a model exhibiting instances in which an individual is likely to be reinforced should the individual perform similar acts. There is exposure to different types of reinforcement encouraging particular types of imitative behavior.

Social facilitation is susceptible to three sets of variables. These include behavior characteristics, reinforcement contingencies associated with matching behavior in the particular setting, and the attributes of the model. For instance, persons in society with high prestige and social status appear to be positively reinforced in many ways in our society. Observation of this fact by individuals often produces imitative behavior drawn from the individual's behavioral repertoire. The attempt is made to elicit the same type of response.

Relationship of Vicarious Learning to Advertising

The three types of major influence of vicarious learning have a myriad of applications in marketing, many

of them specifically in advertising. The use of observational learning (development of new responses) has been used to educate the consumer in product usage and induce the consumer to shop in certain ways. It has also been used to increase the attention span and interest of the consumer to advertising. Models have been especially useful in educating the consumer with regard to the proper use of particular products, especially new market entries. The attentional process here is the key. In order for the consumer to be educated properly, the amount of attention and length of time the attention span lasts needs to be sufficient. This is a problem especially important in the education of the consumer in the use of a new and highly complex product or service. This use of modeling (developing new responses) is common to both industrial and consumer salespeople who are attempting to sell technically complex products (Nord and Peter, 1980).

The inhibition or disinhibition of responses appears not to be as widely used in marketing and advertising as the other influences. Emphasis here appears to be on the question of whether "punishment" or display of consequences of performing certain acts are worth avoiding. The technique often used is to show consequences of performing certain acts in hopes of promoting certain types of behavior. The application of

this method of behavior modification can be seen often in the form of public service announcements with regard to littering, smoking, pollution, etc.

Response facilitation is applied extensively in advertising. This process involves the facilitation of the occurrence of desired behaviors already present in the individual's behavioral repertoire. This type of modeling influence is used in advertising to illustrate uses of a product in showing what "types" of people use a product and in what settings. An example might be promotion of a product with high status connected to its use or ads demonstrating positive consequences of using a particular product (Nord and Peter, 1980).

Recent Research that Supports Choice of the Problem

Research studies applying vicarious learning techniques to marketing practice are not prevalent. Behavior modification is a well developed area in the psychology literature, dating back to the days of Skinner. However, most research linking marketing to psychology is regarding the cognitive processes in the area called consumer behavior. Recent interest in the area of vicarious learning and the possible contribution this area could make to marketing practice is evident in work done by Nord and Peter (1980); Peter and Nord (1982).

The first article, which appeared in the Spring 1980 Journal of Marketing examines many areas of behavior modification including vicarious learning. They suggest many areas in marketing where behavior modification is already applied and feel more research needs to be done. Rothschild and Gaidis (1981) picked up on Nord and Peter's (1980) interest in this area and focus on shaping as an area that would provide a good theoretical base as a guide for the use of promotional devices available in marketing today. They also state there is a possibility consumer behavior should remain the primary source of information for purchase behavior. They believe behavior modification is a useful technique to consider when the consumer is involved in a purchase situation where there is low involvement, and there are weak cognitive processes in operation.

Peter and Nord respond in the summer of 1982 to point out their strong belief that operant conditioning should not be constrained to low involvement purchase situations; that the technique should have application in high involvement purchase situations as well. They conclude stating they hope to see a continuation of work in this area, as it is a vital area of interest to those concerned with predicting and controlling purchase behavior.

Therefore, with the increased interest in this area of behavior modification, its application to marketing, and with all the possibilities of gaining new insight into purchase behavior, further investigation does seem warranted. This is especially true of an area such as vicarious learning, where the technique is used extensively without much research to date attesting to its effectiveness.

Theoretical Development

Vicarious learning in context of consumer behavior. Behavior modification is defined as the manipulation of behavior by changing one's environment. Nord and Peter (1980) and Peter and Nord (1982) have positioned it in relation to consumer behavior by naming behavior modification as a complementary area. One that would help explain purchase behavior along with consumer behavior. They state that while consumer behavior concentrates on explanation and prediction of the inner processes of the individual, behavior modification views those inner processes as a given and works with environmental influences.

Vicarious learning is a type of behavior modification in which a model is observed receiving positive reinforcement for an action in the hopes the

observer will follow suit and repeat the model's action. Vicarious learning is frequently used in advertising.

The purpose of this section is to provide a more nearly complete picture of the relationship between consumer behavior and vicarious learning. In order to do this, first two very relevant areas in consumer behavior to vicarious learning, involvement and situation will be discussed. Finally, these concepts will be organized with vicarious learning in a framework.

Peter and Nord (1982) state that behavior modification can and should be used in purchase situations that are of a high or low involvement nature. They refute Rothschild and Gaidis who seem to feel that behavior modification is more appropriate for low involvement purchases; that in high involvement purchases the cognitive process takes over, and consumer behavior would provide a better explanation for the consumer's actions.

Involvement is a key area in consumer behavior because examination of this area raises the question of whether or not there is a decision process (such as depicted by the EKB model). Olshavsky and Granbois (1979) found evidence showing that a significant number of purchases may not be preceded by a decision process. In particular, they found that purchases occurring out of necessity are often derived from culturally mandated

lifestyles, and can occur on a random or superficial basis.

Rothschild (1975) describes involvement as the mediating variable between stimulus and response. Behavior modification is based on this stimulus response model, as is the consumer behavior approach to understanding the decision making process.

Involvement is not considered a portion of the well known EKB model itself, but as a kind of context in which the decision is made. There is a feeling among managers and advertisers that everyone is highly involved in the purchase of their product, which is just not true. Therefore, it is with the realization that there can be different levels of involvement that the decision making process and individual behavior toward a purchase must be viewed.

The other area of consumer behavior which is closely related, but not really the same, is situation. Behaviorists look at situation in terms of points in time, consumption versus purchase situations, for example (Stanton and Bonner, 1979). Belk defines it as a locus of time and space other than intra-personal variables and other than stimulus (choice alternative) attribute influencing the behavior of an individual as he makes a purchase. The difference between the concept of situation in consumer behavior and behavior modification is in

the approach of study. Behavior modification tries to alter the environment in order to influence the purchase process, while consumer behavior studies and tries to create classification schemes for different types of situations as they exist, without altering the situation itself in order to produce different behavioral responses. It is true that consumer behavior is interested in identifying the particular situation that has the most influence on the decision making process, but cognitive processes are considered well. Situation is considered in conjunction with the cognitive process, identified as another influence on the decision making process in consumer behavior. Behavior modification views changing the environment as the key in controlling the purchase process, accepting all of the cognitive processes as a given.

In order to provide a clearer relationship between behavior modification and consumer behavior, a framework based on the aforementioned observations will be developed. This framework will put the concepts of situation, environment, and behavior modification in context based on the S-R model.

The S-R model is very key in the link between consumer behavior and behavior modification.

Consumer behavior model, EKB in particular, are based on the S-R model. The EKB model represents the

"black box" unknown portion of the individual where all of the cognitive processes take place. Consumer behavior recognizes that a S-R type situation is taking place in a form of S → black box → R (This format represents S-O-R). Stimuli in the form of media, advertisements, or whatever, prompt a person to perform an action in terms of a response. Hopefully, the response is purchase of a particular product made by a particular seller of goods. Behavior modification takes the black box as a given, accepts the S → R model in this simpler form, and concentrates on changing the environment surrounding the individual to evoke the desired response (purchase of a seller's product). Situation, in consumer behavior, is viewed as a stagnant variable, one in which the S → black box → R process takes place. This is in direct contrast to behavior modification which alters the environment to produce the desired response.

The other concept discussed, involvement, is directly related to the S → R model, be it the S → black box → R or S → R models. The essential question raised concerning involvement is whether the individual purchasing the product has a high or low level of involvement with it. In consumer behavior, this leads really to the question of whether there is even a decision process (existence of the "black

box") in the case of low involvement products. This suggests cognitive processes take over and become dominant when there is high involvement, thus rendering behavior modification techniques less efficient. However, Nord and Peter (1980) disagree with this standpoint.

To summarize, the purpose of this section was to relate behavior modification to consumer behavior. Two areas, involvement and situation, that have common aspects in both consumer behavior and behavior modification were discussed. Both consumer behavior and behavior modification make use of the S - R (stimulus - response) model, and this was discussed.

Practical Application

The relationship of vicarious learning to advertising has already been explained. It is obvious from an evening's viewing of television that vicarious learning is extensively used. Whenever people on television are positively reinforced for using a product, vicarious learning is applied. A man uses a particular aftershave and gets the girl, a woman applies make-up and appears more beautiful, for example. The list is virtually endless. With all of this application of behavior modification techniques, what about research in the area? Are there studies to back up the applicability

of behavior modification in advertising? If so, how useful is the application of behavior modification?

Statement of the Problem

The purpose of this investigation is to establish the effectiveness of the use of vicarious learning in advertising for the promotion of complex, technical services.

Specifically, answers to the following questions are sought:

1. Are consumers that are exposed to commercials with the use of vicarious learning (modeling) more likely (at the .05 level) to purchase a teller card than those who are exposed to commercials without the use of vicarious learning?
2. Does the use of vicarious learning (modeling) help educate consumers by teaching them how to use a complex, technical service?

CHAPTER II

LITERATURE REVIEW

Introduction

The background review of the development of behavior modification is complete; therefore, attention is now focused on applications of behavior modification.

This study is concerned with the application of a behavior modification technique (vicarious learning) in advertising. Therefore, an examination of the literature is made of both clinical and other applications of behavior modification to determine past research directions. The link between psychology and advertising is established to validate the use of behavior modification (an area of psychology) in advertising. Finally, a framework is presented depicting the operation of vicarious learning. Each component of the framework is examined in depth regarding research direction and findings to date. The framework will be tested in this study to determine whether the framework is an accurate representation of the operation of vicarious learning. The hypotheses regarding the test of the framework are enumerated in the next chapter.

Behavior Modification - Clinical Applications and Applications other than Advertising

Behavior modification has many clinical uses in psychology for treatment of disorders as well as other more general types of applications. The purpose of this section is to review both the clinical applications and the other more general applications (unrelated to treatment of disorders) to gain a better understanding of the usefulness of behavior modification techniques. These applications are summarized from Craighead, Kazdin, and Mahoney (1981) who compiled work from the authors cited below. This examination should help to determine the possibility for application in the area of advertising. Examples of clinical applications will be reviewed first.

Anxiety management (Bernstein, 1981) is one area where behavior modification techniques have been useful. When arousal for a patient becomes prominent in terms of intensity, frequency, duration, and generality, a behavioral problem is identified. Modeling (vicarious learning) is often employed in the treatment of anxiety by showing the patient models fearlessly dealing with anxiety producing situations. Since anxiety is seen as a learned phenomenon, it is felt a learning-based therapy technique such as modeling is an appropriate way to deal with the problem.

Depression (McLean, 1981) is described as a side effect resulting from problems in life and their interpretation. Generally, treatment is composed of specific intervention techniques to achieve performance of goals in the areas of social interaction, behavioral productivity, and cognitive control.

Assertiveness and the acquisition and practice of correct social skills are problems for some people. According to Curran (1981), teaching skillful response alternatives in varying situations is important. Training for this involves instructional presentation, modeling, behavioral rehearsal, feedback and coaching along with practice.

The addiction process that a person goes through, whether it be to drugs or alcohol, appears to occur within the framework of cognitive social-learning theory. Modeling is believed to be one technique useful in controlling alcohol and drug abuse. There is a focus on influencing the cognitive factors in terms of treatment. With this type of disorder, behavior modification serves as both a technique for understanding the problem, and a method of treatment (Marlatt and Donovan, 1981).

Behavioral interventions are more successful than traditional treatments in weight reduction and smoking cessation. Clinicians have designed treatment

programs for both problems and found much success for those who have not been successful with their own efforts (Marlatt and Donovan, 1981).

Behavior modification is probably characteristically thought of as a method of treatment for mental patients. Token economies are highly successful in the treatment of chronic mental patients. There are also programs individually designed especially for patients that are psychotic and neurotic (Hersen and Bellack, 1981).

Relationships among people are difficult, particularly between a couple who are married. Although most people don't equate behavior modification techniques with the improvement of relationships, certain of these techniques are used for just that purpose. The use of these techniques is based on the main theoretical premise that marital satisfaction is a function of spouse-emitted reinforcers and punishments. BMT (Behavior Modification Therapy) is used to emphasize communication and problem-solving skills which are considered the most important in having a satisfactory marital relationship. BMT is successfully used for mildly as well as severely distressed couples (Jacobson and Dallas, 1981).

Use of behavior modification in the classroom began with the controlling of inappropriate behavior. The techniques used include use of clear rules, positive

reinforcement, soft versus loud reprimands, ignoring minor rule infractions, and time out as a substitute for punishment. Its continued use is successful in promoting both academic learning and appropriate behavior. The classroom token economy is generally used. Usually some form of reinforcement that is contingent upon small units of correct academic behavior is provided (Lahey and Drabman, 1981).

Application of behavior modification techniques in institutions for delinquents is more effective than treatment of delinquents in traditional institutions (Stumphauzer, 1981). Behavior modification is also used on adult offenders with great success. A cellblock token economy, shoplifting prevention program and a behavioral probation program all met with great success (Stumphauzer, 1981).

To guide one's own behavior, self control techniques are used. The principles of self-reinforcement and punishment work to establish or modify the expected behavior pattern. Modeling can be used to convey performance standards that are useful to the individual in evaluating his/her accomplishments. One of the limitations of the use of self control technique is that the individual often does not adhere to the reinforcement and punishment schedule. There is also some question as to whether self control procedures are

applicable over a wide range of populations. Generally, self control techniques are restricted to outpatient populations who have demonstrated the ability to correctly carry out the technique (Kazdin, 1978).

The techniques reviewed above are clinical in nature. The purpose of illustrating them is to enumerate the more traditional applications of behavior modification techniques. What follows is a description of a broader application of behavior modification techniques. Successful application in advertising is also reviewed.

Litter prevention is accomplished with moderate success when behavioral interventions that employ salient prompts are utilized (e.g.: personal pleas, bumper stickers, posters, newspaper advertisements). Moderate success is achieved with the manipulation of the environment by cleaning the environment and providing attractive trash cans (Meyers and Schleser, 1981).

Prompts plus incentives are useful to encourage litter removal, a separate and distinct problem from litter prevention (Meyers and Schleser, 1981).

Recycling is an alternate way of reducing the litter problem. Legislative interventions in terms of laws that regulate package design to ensure that new containers are environmentally sound has been instigated. Prompt and incentive use is also encouraging (Meyers and Schleser, 1981).

Behavior modification techniques are used to encourage energy conservation. Feedback concerning the high costs of operating an automobile is used. Rewards are offered for reduction in gas mileage. Increased driving efficiency in terms of more miles per gallon is obtained by using behavioral intervention, feedback, social recognition, and reinforcement lotteries. Behavioral intervention is also successful in increasing car and van pooling. Reinforcement techniques are useful to encourage mass transportation use (Meyers and Schleser, 1981). Therefore, it appears a number of techniques are successful in improving transportation efficiency should there be an inclination to actively pursue the use of these techniques to encourage the public to use transportation in an energy-efficient manner (Meyers and Schleser, 1981).

Home energy use is addressed with prompts, feedback and incentives. Feedback and incentives are moderately effective; large rewards and frequent feedback are more effective in reduction of home energy consumption than small rewards and infrequent feedback (Meyers and Schleser, 1981).

Health care is another area where application of behavior modification techniques is successful. The techniques are applied in the areas of screening and entry into treatment, lifestyle change, and environmental

change. Incentives, for example, are used successfully to encourage people to seek initial screening and enter and complete treatment. Lifestyle change programs in terms of getting people to quit smoking and not overeat are successful with the use of behavioral intervention. (Meyers and Schleser, 1981).

Behavior modification is also used to develop "social competence," (Kirschenbaum, Pedro, and DeVoge, 1980) a term for behaviors that include interpersonal problem solving, decision making, job seeking, child rearing, and self management (Meyers and Schleser, 1981, p.494).

The purpose of the above section is to establish the broad application of behavior modification techniques. From an early clinical, psychological type of application, these techniques have gradually, and quite successfully, been applied to areas far removed from their traditional type of use. This type of atypical application of behavior modification techniques opens the door for further development in this area. Specifically, these types of applications help justify the use of vicarious learning, a specific behavior modification technique, in advertising. A review of the development of this particular area follows. The review also establishes the link between psychology and advertising

to validate the use of vicarious learning (an area of psychology) in advertising.

Psychology and Advertising

One area where behavior modification and specifically vicarious learning is practically applied and, therefore, linked theoretically is advertising. This indicates a conceptual relationship between advertising and the area of psychology. The literature will be examined in chronological order for evidence of the relationship between psychology and advertising, so the investigation of the use of vicarious learning (an area of psychology) in advertising can continue.

In the late 1950's and early 1960's, there first appears some investigation in the literature about cognitive processes and advertising appeal focusing on the consumer. Consumer needs are just starting to be examined closely during this time. Along with a close examination of consumer needs comes a curiosity about the cognitive process and the realization that some effort is needed, perhaps in the area of market research.

James Bayton (1958) identifies areas of interest that need to be investigated more thoroughly, and specifies a research approach for doing so. The approach is the typical research process with the steps of problem definition, set up hypotheses, data

collection, analysis, and conclusion. Human behavior is classified into motivation, cognition, and learning. Cognition is identified as the area in which all mental phenomena such as perception, memory, and judgment are grouped. Learning is defined as those changes in behavior occurring through time relative to external stimulus conditions.

Bayton (1958) goes on to describe consumers as going through "cognitive processes" as they make product choices. Learning is described in terms of increasing the likelihood that an act will be repeated as a result of positive reinforcement in the form of satisfaction with a product. Reinforcement is described as necessary for learning to take place. This theory of learning is the basis of behavior modification. This strong emphasis on the importance of learning and the need to understand the cognitive processes does assert itself in early years (Maynard, 1960). Interest in learning also is coupled with a recognized need to understand the behavioral processes in terms of a scientific approach (Maynard, 1960).

There was also some feeling in the early 60's that advertising was an art form simply being performed without much reasoning behind it. Groesbeck (1960) takes advertising to task for this and tries to get the

industry interested in the consumer's mind and how it operates.

From the mid to late 60's the issues examined linking psychology with advertising are pursued in more depth. There was still some concern over whether advertising executives really understood the link between psychology and advertising, and whether or not it was being used properly (Wasserman, 1966; Lyons, 1969).

There is more evidence of concern over advertising's influence on the consumer's cognitive process in this time period. Representative of this concern is an investigation by Lyons (1969) in which concern over advertising's influence on the consumer's cognitive process is minimized. Persuasion is portrayed as a process that takes years; not one that can be completed with the use of a single advertising campaign. The consumer has what is termed a "mind-set" where the person filters out what he/she does not want to comprehend. "Brainwashing" is claimed to be possible when all communication is controlled by the brainwasher, a situation which has no relevance to ordinary business conditions.

The application of psychology to advertising took a sophisticated turn in the early to late 70's. The area of psychology and learning had developed considerably as a discipline by then and academicians

began to investigate the area. Prior to this time, much of the work in applying psychological principles to advertising was done by practitioners in an effort to improve their advertising campaigns and prove advertising was not a "brainwashing mechanism."

Green, Wind and Jain (1972) did some work on belief systems related to product classes. Although Green and Wind have explored this area in the past, their subsequent investigations are much more marketing-oriented rather than advertising-oriented. Belief systems operating in the cognitive process that affect the processing of information are revealed in this investigation.

A study by Syzbillo and Heslin (1973) uses social psychology (an area of psychology involving the individual and his/her interpersonal relationships) as does the previous article in examining the strategy advertisers should take when their claims are attacked by the government or anyone else. Beliefs are also studied here to come to the conclusion that advertisers should issue a defense versus no defense and then refute an attacker's arguments.

The research of Watson and Gatchel (1979) is typical of research in the late 70's on psychophysiological approaches that can offer help in the measurement of advertising effectiveness. Pupillary

responses, electrodermal activity and heart rate were found to be sensitive to psychological processes of concern in advertising.

Recent research examines the application of an area of psychology (behavior modification) to advertising. (Nord and Peter, 1980; Rothschild and Gaidis, 1981; Peter and Nord, 1982). Vicarious learning is the type of behavior modification that is investigated in this study. Figure 1 presented on the next page suggests the process that occurs as vicarious learning takes place. The process is based on a stimulus-response type of model with the commercial representing the stimulus and the response being measured in terms of how closely the participant watching the commercial imitates the behavior in terms of purchase and/or correct operation of the product. The framework presented is adapted, in part from Alan Wiman's (1979) dissertation where a process is presented depicting the effects of television advertising on the child. The framework is composed of several information processing elements as presented in the EKB (Engel, Blackwell and Kollat, 1978) model (attention, retention) that relate to the cognitive aspect of the operation of the vicarious learning process. The framework presented contains many of the elements commonly used in hierarchy of effects models to represent the advertising process (Moriarty,

Framework

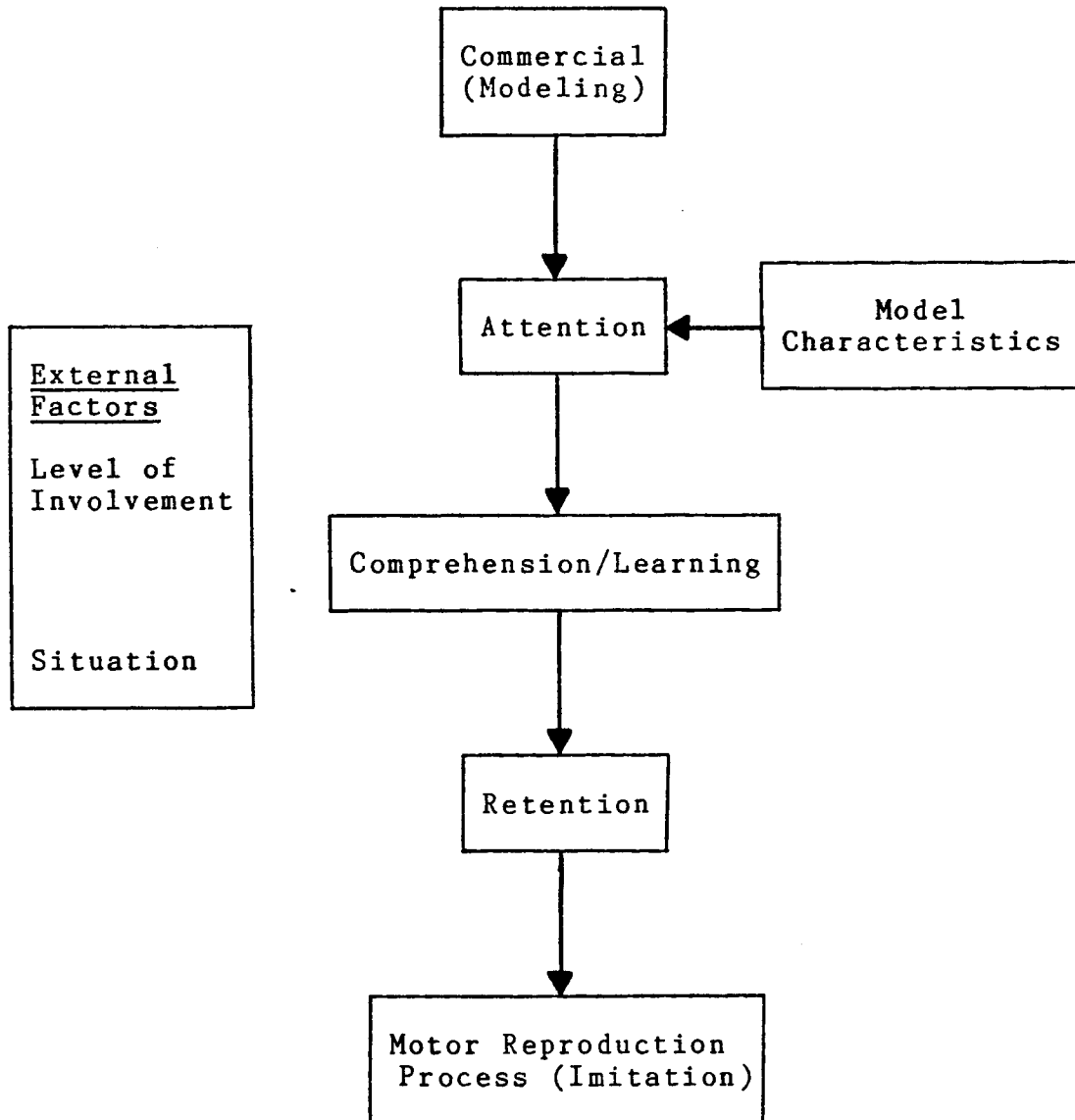


Figure 1. Proposed representation of the vicarious learning process.

1983). Imitation is the hopeful result of the operation of the cognitive processes. Attending behavior is an important element in the process, one which determines whether the process continues from that point. If the participant does not attend to the commercial, the process will cease to operate, and no imitative behavior can be expected. There is some suggestion that the vicarious learning process increases attending behavior (Nord and Peter, 1980), a question which will be examined.

Comprehension and/or learning must take place to produce imitative behavior. This step is central to the procedure for vicarious learning to occur. It is also considered an appropriate element in a hierarchy representative of the advertising process (Moriarty, 1983).

Retention is felt to be a necessary part of the process in order to be able to reproduce behavior exhibited by the model. Unless the participant can remember how to operate the product that is being demonstrated, purchase is unlikely since the purpose of educating the consumer in product use is to make purchase behavior more likely.

There are external factors affecting the process. The involvement of a consumer with a purchase process, there is some feeling, determines whether this

process actually takes place or whether the inner workings of the consumer mind dominate completely (Nord and Peter, 1980; Rothschild and Gaidis, 1981; Peter and Nord, 1982). Situation can be an important aspect in terms of use of the product, depending upon the product. Educating a consumer on correct product usage can directly involve a particular situation.

The literature will be examined using the vicarious learning framework as a guide.

Commercial Stimulus

The proposed theoretical process is based on a stimulus-response type of model, well established for many years in psychology (Preston, 1982). A review of the literature indicates very limited application of any type of operant conditioning techniques to the area of advertising. Interest in the "internal processes" pursued in advertising in the name of consumer information processing has prevailed (Preston, 1982). However, in the limited number of studies conducted with the use of operant conditioning techniques, TV commercials are utilized as the stimulus (Preston, 1982; Wolf, Newman and Winters, 1969; Nathan and Wallace, 1965; Lindsley, 1962; Winters and Wallace, 1970). Since the operationalization of vicarious learning demands a "model" to demonstrate

how to use the product in order to produce imitative behavior, it seems appropriate for this to be accomplished in the form of a commercial.

Attention

Research in the area of attention follows several streams. There is some research using children as participants which are examined. The area of self focused attention is also examined. The concept of attention as a cognitive process is also summarized.

Children and attending behavior is an area of interest due to the type of segment being dealt with. Attaining the attention of children is often seen as especially difficult and important due to the age factor. Several tendencies have been found regarding children's attending behavior. Children's attention levels fall when a commercial is shown with full attention being greatest to the commercial at the beginning of a program. It is also shown that older children pay less attention to commercials (Ward, Robertson and Wackman, 1971).

Self focused attention is an important issue in the literature. Lammers (1979) found that self focused attention enhances one's dominant cognitive response to advertising stimuli.

Attention has recently been recognized as a cognitive process and treated as such in an attempt to understand the way it operates (Lynch and Srull, 1982). Attentional processes have been strongly related to the component of advertising communication (Fennel, 1979). One important aspect of this research that appears to be directly linked to the examination of vicarious learning is the implication that attentional capacity seems to increase at a decreasing rate with task demands.

One can come to the conclusion from a survey of the literature on attention that the area has been linked to and recognized as part of the process of identifying and creating effective advertising. More recent research is accepting attention as an important part of the decision process as well as a cognitive concept, which is the way it is modeled in the proposed vicarious learning process. Behavior modification theory regarding vicarious learning states that attending behavior is increased through the use of the modeling technique (Nord and Peter, 1980). It is an area that can be seen developing and has possibilities for further development and linkage to vicarious learning.

Model Characteristics

Vicarious learning, by definition, involves the observation of a model performing behavior that will

hopefully be imitated by an observer (Bandura, 1969). Research demonstrates that types of behaviors and physical characteristics of models have an effect on subsequent learning. The advertising industry has characteristically been more interested in physical traits of models, especially physical attractiveness, while the area of psychology has conducted a close examination of specific types of behavior of models for imitative purposes.

The area of psychology and its examination of model characteristics in terms of behavior will be examined first since that area was first to develop.

Characteristics of models in a behavioral context are examined from several different aspects. Among those areas examined are control of model over future (Grusec and Mischel, 1966), competence of the model (Rosenbaum and Tucker, 1962), use of CEO as a model (Kerin and Barry, 1981), sex of model (Phillips, Bentson and Blaney, 1969; Reid and Soley, 1980), and aggression (Bandura, Ross and Ross, 1961). The results generally support the theory that model behavior influences the learning and imitation on the part of the observer.

Both the observer's learning of the modeled behavior and his/her willingness to perform the behavior are influenced by models with "social characteristics" of a highly rewarding adult model who could have control

over children's future resources versus a nonrewarding model who would not have future control (Grusec and Mischel, 1966). Model's competence is indicated by the experimental method to be influential in affecting imitation on the part of the observer. It is demonstrated that the greater the model's competence, the greater the facilitation of the acquisition of the imitative response (Rosenbaum and Tucker, 1962).

Observers exposed to an altruistic peer model display significantly more altruism than observers not exposed to a model (Hartup and Coates, 1967). However, another hypothesis of greater effectiveness for same sex models was rejected for vicarious reinforcement (Phillips, Bentson and Blaney, 1969). Finally, aggression has been found to be learned successfully from models by observers. Subjects that observe aggressive models later reproduce a good deal of physical and verbal aggression (as well as nonaggressive responses) in accordance with what the model demonstrates. Subjects exposed to nonaggressive models only rarely perform such responses (Bandura; Ross and Ross, 1961).

The advertising industry has always been interested in how representatives (models) that promote their products are perceived and imitated. Of recent (and some past) interest is the evaluation of spokespersons. It is generally believed by some that a

spokesperson heightens awareness and can even achieve a perceptual restructuring of even a long-established brand (Kamen, Azhari and Kragh, 1975). However, there is still a need for careful pretesting of promotional messages to establish audience perceptions (Mowen and Brown, 1981).

Sex perceptions (male versus female) are also examined from a marketing perspective. It is suggested that perceptions of male and female models differ as a function of time of airing and product, but not as a function of sex. The conclusion is that women are not portrayed in a more negative way than men in today's TV commercials (Sharits and Lammers, 1983). It is suggested that subjects will rate an advertisement showing a model of the opposite sex higher than they will an advertisement showing a model of their own sex (Baker and Churchill, 1977).

Nudity of models and their use in advertisements is also an issue. Respondent's feelings toward an advertisement and product were measured using a series of simulated TV advertisements for a personal care product where the level of undress of the female model was varied. Results demonstrated that attitudes toward the advertisement were inconsistent with those toward the product; a medium level of nudity generates the most

favorable response toward the advertisement' (Sibley, Weller, and Little, 1982).

Advertisers are concerned about the issue of physical attractiveness of models. A number of studies have been conducted on the subject, and some general implications can be stated. Usually attractive (versus unattractive) communicators are liked more, perceived in more favorable terms, and have a positive impact on the products with which they are associated. Some attractiveness also appears to be positively related to agreement (Joseph, 1982). Physically attractive models have been found to produce higher ad ratings than unattractive models (Baker and Churchill, 1977).

Comprehension/Learning

Comprehension of the message is essential if the vicarious learning process is to take place. Although the literature does not address the comprehension issue in terms of vicarious learning, it does address the issue of comprehension of commercials and advertising which is the area of concern in this study. There are several approaches which are taken with regard to comprehension of advertisements. All of these approaches will be examined for progress in the literature to date, and implications for this study examined. The cognitive approach, in which messages are

modeled and examined in terms of cognitive responses to the message will be examined first. Another approach is to examine the comprehension of an advertising message from the viewpoint of a communication process taking place. The third approach discussed in the literature involves the examination of information processing.

Bayton (1958) describes learning as a change in behavior that occurs through time relative to external stimulus conditions. This is in keeping with the theory of behavior modification that concentrates on altering the environment to induce learning. Cognition is described by Bayton (1958) as the area where all the mental phenomena (perception, memory, judgment, thought process, etc.) are grouped. These two concepts taken together describe the process of vicarious learning very aptly. It involves alteration of the environment in terms of presentation of a commercial with a model as well as involvement of the mental processes in comprehending the commercial. Therefore, it is entirely appropriate that cognition or the cognitive aspects of the mind be examined.

The cognitive processes are very relevant to advertising comprehension due to the implication these processes are often closely tied to, and actually a part of such aspects of advertising as attitudinal message acceptance (Wright, 1973; Olson, Toy and Dover, 1982) and

belief and behavioral intention (Olson, Toy and Dover, 1982). The relationship between product familiarity and cognitive structure is established (Conover, 1981), with the surprising finding that more familiar consumers maintain relatively more complex knowledge structures. Cognitive processes are important in the acceptance of advertising (Wright, 1973). This is not a surprising finding considering attitude change, behavioral intention, and alteration of beliefs are often measures of advertising effectiveness. Message reception is also a measure of effectiveness and a result of the cognitive process. Message reception is also an important element of the communication process (Kasulis and Zaltman, 1977).

Kasulis and Zaltman (1977) found mixed results when testing particular cognitive styles and their impact on message reception. However, despite the mixed results, the subject warrants further investigation. Cognitive structure and its effects on communication has also been investigated by Lutz and Swasy (1977). They present the cognitive concept in terms of structure concentrating on the process that occurs within the individual to influence behavior and cognitive response, concentrating on the individual's thoughts, reactions, or ideas that occur during exposure to a message.

Repetition is recognized as an important aspect of establishing desired cognitive effects by Mitchell and

Olson (1977). Although repetition is studied extensively throughout the literature and is recognized as a way to increase effectiveness of advertising, the examination of repetition on these specific cognitive elements (beliefs, attitudes, and behavioral intentions) recognized as part of the cognitive process is unique (Mitchell and Olson, 1977).

Cognitive processes and elements are closely intertwined with the communication process (Lutz and Swasy, 1977; Kasulis and Zaltman, 1977). It is difficult to separate one from another since each is an integral part of the other. Therefore, it is easily seen that a study of the cognitive processes logically leads to an examination of the communication process, another aspect of learning with regard to televised messages. Understanding the communication process is essential to the creation of televised commercials with messages that can be learned with ease.

Communication is always a major concern of advertisers. The constant fear that miscomprehension often occurs has some substantiation. Jacoby, Hoyer and Sheluga, (1980) find that virtually all viewers miscomprehend to some extent. Many advertisers feel a better understanding of communication will foster more efficient communication. An attempt to analyze and understand the communication process is attempted from

several different viewpoints. Stidsen (1970) integrates the advertising process with the "communication system" as it is called to suggest a research paradigm involving elements of the consumer's communication system (awareness, input system, goal seeking, integration, and commitment) and characteristics of approaches to analysis and description of the advertising process (physical, psychological, functional, structural, and moral).

Aaker and Day (1971) challenge one of the more classic models of the communication process that states an individual moves from unawareness to awareness to knowledge, preference, and then purchase. It is implicated that advertising can influence behavior by working through awareness and that the influence of advertising seems to go from awareness directly to behavior.

Danes and Hunter (1980) propose and test three communication models -- consistency, contingency, and transfer discrepancy. Each of the models predict intention change as a function of belief-discrepant messages, relating communication to intention change.

Advertising decisions are often made with respect to the type of communication theory that is acceptable to the individual or decision making group. Comparative advertising, for example, is an area of concern since legislation was passed allowing comparative

advertising to take place. Prasad (1976) assesses the effectiveness of comparative advertising and finds that it enhances message recall to some extent. Kanter (1970) considers communication theory and the proper development of it essential for proper practice. The research done to date is reprimanded for improper use and development of variables for communication models as well as general obscurity regarding the internal dynamics of advertising responses.

It is evident the development of communication theory takes many directions often depending upon the particular researcher's interpretation of the process. Each interpretation is often specific to the individual representation, although many rely, at least as a basis, on the cognitive processes that are generally recognized as part of mental performance (belief, attitude formation, etc.).

The final area the literature explores in an attempt to understand the learning of advertised information is information processing. The process itself is examined in several different areas in the literature with respect to advertising. May (1978) compares learning theory with information processing theory to explain evoked set composition and formation. From the comparison, information processing theory

implies that type of product specifications do not change as the consumer accumulates purchase experience.

Mitchell (1979) takes an information processing approach for examining advertising effects. The results suggest there are two different low involvement processes that may result in the formation of different attitudes and the retrieval of differing amounts of brand information from long term memory.

Barnaby and Williams (1981) present findings supporting the usefulness of analyzing information sources in terms of sense modality. This appears to be a useful tool in understanding the information processing theory.

Calder and Sternthal (1980) assess TV commercial wearout from an information processing perspective. They imply wearout is not forestalled by strategies designed to enhance attention.

The literature gives limited attention to information processing in connection with the role it plays in processing advertising. However, there is a genuine interest demonstrated in this area.

Retention

Retention and/or memory processes are extremely important to the advertiser. Unless the message is retained for further use in the future, the advertising

is ineffective. This is especially true when a learning process, such as vicarious learning, takes place.

Learning and memory are often synonymous (Saegert and Hoover, 1976). The area of memory, retention, and recall is one in which the advertising industry has a profound interest and one which is investigated extensively (Leavitt, 1968; Haller, 1972; Krugman, 1977; Zielske and Henry, 1980; Srull, 1983; Saegert, 1979).

The theories concerning memory will be examined and then the applications to advertising reviewed.

The theories concerning memory can be divided into four basic categories: short-term/long-term memory models, levels of processing model, imagery model, and psycholinguistic theory (Saegert and Hoover, 1976). Each of these areas will be examined and discussed separately.

Short-term/long-term memory models was perhaps the first movement away from traditional tenets of associatiousism or S-R psychology, and towards examination of the more cognitive higher-order thought processes (Saegert and Hoover, 1976). This type of approach is embedded in consumer information processing as well (Chestnut and Jacoby, 1977) where the entire information intake and output is approached in terms of an input information processing and output type of model involving long-term and other memory stores that are akin to what is generally called short-term memory (Chestnut and

Jacoby, 1977). Bettman, (1979) in a review of memory factors concerning consumer choice also acknowledges the operation of a short and long-term memory and identifies these elements as important in the concept of memory utilizing the multiple store approach. In these conceptualizations, the short-term memory has limited capacity and information is kept active in it by further processing (Chestnut and Jacoby, 1977). Long-term memory is for information storage for future use.

The levels of processing model focuses on the depth of processing of information. It is described as a continuum from shallow to deep levels with the type I level maintaining the information at a useful, but superficial level, while type II integrates the meanings of the material and allows the network of knowledge to become relatively permanent (Saegert and Hoover, 1976).

Although research in the above two areas (short-term/long-term and levels-of-processing model) appear to be more prevalent in the literature, the areas of imagery and psycholinguistic theory are developing as well. The basis of imagery revolves around choosing material to be remembered from a pool of items scaled for imagery value or concreteness. Items are standardized by subjects who rate on a one to seven scale the degree to which each word evokes a sensory image. High imagery material is found to be more easily remembered than low

imagery material. The theory states high imagery material is coded along a verbal and imaginal dimension while low imagery material can only be coded verbally (Saegert and Hoover, 1976), and therefore high imagery material is more easily retained.

Psycholinguistic theory is perhaps the newest approach to memory. This approach espouses the theories that are consistent with the acquisition of language processes in general, supporting the reconstructive view of memory.

One study directly links environmental influence to memory processing. Biehal and Chakravarti (1981) have conducted an experiment which examines the effects of task environment structure (different information presentation formats) and learning goal difference (directed versus non-directed learning of product information) on consumer's retrieval of product information from memory and also on choice processing. Significant differences in both memory retrieval and choice due to the manipulating are demonstrated. Attribute based processing in retrieval is highest when the information is learned in an attribute structured environment.

Although progress has been made in the area of memory, there are still many research issues that need to be addressed. Memory needs to be defined and a

conclusive theory established. There is a movement towards the acceptance of the cognitive processes important in memory. The examination of the inner-workings of the mind appears to be the theoretical movement of the future, although there seems to be little or no agreement on the memory process itself. Next, an examination of advertising's application of research on retention will be examined.

The advertising industry, particularly those concerned with the production of commercials, has always been interested in the area of retention. The earlier research involves a basic concern with advertising recall. Many methods of measuring recall and analyzing it are examined and considered (Leavitt, 1968; Haller, 1972; Krugman, 1977). Trying to predict and measure basic recall is a concern of many researchers. Leavitt (1968) analyzes responses to open-ended questions about TV commercials and finds they produce a score which correlates highly with a day after recall score. Haller (1972) claims recall of TV commercials can be predicted by measuring pictorial value, empathy, interest, and clarity. The claim is that these basic elements of communication are correlated with high scoring well remembered copy. Krugman (1977) by examining the recall issue sets the stage for later research when he delves into the inner workings of the brain. The right side (of

a brain divided into two halves) possibly screens the environment to select what the left brain should focus attention on. Srull (1983) suggests that initial evaluations are strongly influenced by subjective mood states at the time of information acquisition, suggesting this would interfere with the strict process of encoding information into memory. It is suggested mood will interfere with this seemingly straightforward process and also interfere with retrieval after a long period of delay affecting levels of recall.

Saegert (1979) further carries the examination of recall to a more cognitive level. It is demonstrated through experimentation that memory is superior for items that are processed at a deep level. This is in keeping with the levels-of-processing theory of memory which states that the stimulus material will be remembered in accordance with the amount of personal elaboration to which it is subjected. Saegert's findings are later reaffirmed and extended from application to print advertisements to TV commercials (Reid and Soley, 1980).

It is evident that the measure of recall, a practical application of what is observed in theory, is progressing along the lines of theory development. Recall measurement is being conducted with a more cognitively oriented approach as the theory development is more cognitively oriented.

Effectiveness

Motor reproduction is essential to the successful completion of the vicarious learning process (Bandura, 1969). Imitation is another term that conveys the meaning of the final step of the vicarious learning process. Imitation of a model demonstrating the correct use of a particular product would entail the observer's use of the product in the same manner as the model's. Advertising, in the form of a commercial, will be used to demonstrate correct use of the product. Proper response to an advertisement in a behavioral sense has always been purchase of the product seen on the commercial. This response is measured in the literature in terms of effectiveness.

The advertising literature is robust with ways of measuring effectiveness. One of the reasons for the variety of technique to determine advertising effectiveness is the difficulty in ascertaining effectiveness. The outstanding problem is to eliminate extraneous variables, other than advertising, that influences sales, the most common dependent variable. In this section, the various methods of measuring effectiveness will be examined and classified.

Measurement of the effectiveness of advertising has historically been approached in many ways. It has

always been of primary concern to users of advertising. Therefore, many methods have been attempted to successfully ascertain whether advertising is worthwhile.

The development of the examination of effectiveness begins with an overall general examination of advertising as a part of the communication process with miscellaneous ways of approaching effectiveness. It continues with the more complex methods of determining advertising effectiveness involving the experimental approach and various types of modeling techniques. These are the areas which will be addressed.

In the early 60's, one is left with the impression that advertising's affect on sales was not completely understood. There were a number of attempts to define and clarify the conditions under which advertising was effective (Dutka and Frankel, 1960; Christian, 1961; Thompson, 1962; Wallace, 1966). Some of the earlier works involve general evaluation of advertising performance from an overview perspective, summarizing all the various available methods known at the time to measure advertising effectiveness (Christian, 1961; Thompson, 1962).

One of several methods suggested is through the implementation of an audit system to examine the areas of marketing functions in the company, attitudes of the market, and communications by the company. Measuring the

cognitive processes in terms of recall and remembering advertising is also a very popular method (Christian, 1961).

Wallace, in a simple step-by-step procedure decides to simplify the problem from an allocation of funds and sales to the functions of a business approach. This involves determination of profitability of every area of the business except advertising. Then deduct this from total profits, and what remains is advertising (Wallace, 1966). Although this may seem to be a reasonable approach from a logical standpoint, the criteria for assigning specific profitability amounts to various functions can be somewhat subjective tempered with judgment that could change from one situation to the next.

Thompson summarizes the basic ways of appraising advertising performance in the early years; measuring awareness of the company, product, or product features, recall of advertising messages, attitude or attitude change of customers, psychological measurements, direct mail response, sales results, extent of use of ad themes by salesmen, analyzing secondary effects (customer or user reactions to ad themes), and establishing what use is made of advertising or promotion (Thompson, 1962).

Advertising has always been regarded as a form of communication. Therefore, it seems appropriate to

analyze advertising in terms of a form of communication (Dutka and Frankel, 1960; Ramond, 1965). Dutka and Frankel talk of feedback as a measure of advertising effectiveness. They suggest feedback is a measure of communication, and since advertising is a form of communication, feedback would be an appropriate measure of effectiveness. Feedback, in this instance, is considered response to coupons, advertising recall, and other types of feedback the marketing operational manager might deem desirable (Dutka and Frankel, 1960).

Ramond (1965) recommends experimentation to determine effectiveness with measures of both sales and communication considered as the optimal approach.

Gardner and Raj (1983) provide a model that discusses expected interactions between varying levels of independent variables that interact with treatment variables in the hopes of designing more realistic types of experiments. There is feeling external validity will be enhanced by allowing selected additional factors to vary over realistic ranges (i.e., in the case of the use of a commercial, attention and factors affecting mood).

Experimentation is widely utilized. Industry has successfully used experimentation as a method for determining advertising effectiveness for many years. The strong attraction to the experimental method seems to be the assurance of a high level of internal validity.

Ramond (1965) feels the experiment is the best method to determine effectiveness when sales and communication are considered together. An opposing point of view in some respects considers size of audience and depth of impact the two basic dimensions to the effectiveness of advertising, but still uses experimentation to establish results (Coffin, 1963). Experimentation as a methodology has been used whether establishing individual attitude response to advertising exposure (Winter, 1973), examining advertising-selling interactions based on attribution theory (Swinyard and Ray, 1977), or in a broader sense such as considering purchase characteristics on post decision product reevaluation with the use of advertising of the products in the methodology (Winter, 1974).

Mathematical modeling is another method of determining advertising effectiveness. Most advertising models relate advertising to sales with sales established as the dependent variable. There are a number of types of advertising models that have been formulated. Many models can be classified as aggregate advertising models (Little, 1979). However, the specific following types will be examined in some detail due to their prevalence in the literature: econometric (Clarke, 1976; Leone, 1983), time series (Kyle, 1978), stochastic (Nakonishi, 1973), and the more basic advertising/sales response

functions (Rao and Miller, 1975). Although those models just enumerated are not an all inclusive list, they are representative of the basic types of advertising models that have developed to date.

The class of models described as aggregate (Little, 1979) basically relate product sales to advertising spending for a market as a whole. These models have further been classified as a priori, which draws heavily on intuition with a model building goal of postulating a general structure, not a specific application. A good example of this type of model is the one by Vidale and Wolfe (1957). There are also models which can be classified as mixed; they start with more complicated a priori models and include endeavors by statistical methods to fit and evaluate them (Little, 1979).

Models based on economic theory are used to indicate advertising effect and cumulative advertising effect. These models are set up to measure the duration effect of advertising in many different fashions. Some examples of these types of models are direct lag models, weighted average models, distributed lag models, polynomial lag models, and partial adjustment models (which state that sales in the current period will be much the same as in the previous period plus a response to advertising) (Clarke, 1976). This technique for

evaluating advertising effectiveness is useful because carryover is considered with the economic situation factored in. The development of econometric models has a long history and many contributors.

Time series is one of the first approaches attempting to establish the effectiveness of advertising. Due to the longitudinal aspect of the time series approach, this has always been considered a favorable method to measure the effectiveness of advertising. This is especially true considering the longitudinal effect that advertising is supposed to generate.

A recent application integrates the time series and econometric approach. Multivariate time series (proposed by Jagpal and Hui, 1980) is seen as an alternate approach to the pure econometric method. With the introduction of multivariate time series analysis, there is realization on the part of some econometricians that model building can be improved by combining the better aspects of the two methods and integrating the two approaches (Leone, 1983).

Stochastic modeling in this area is mostly confined to the description of consumer responses toward new products. There is the development of a fairly recent stochastic model which incorporates the effects of

over-time variations in both advertising and promotion (Nakaniski, 1973).

The last area of modeling to be examined is the development of advertising/sales response functions. These functions can be developed as necessary based on the particular need, for budgeting purposes or awareness of sales potential. Rao and Miller developed several, illustrating a procedure for empirically estimating advertising/sales relationships from historical data (Rao and Miller, 1975). This type of approach is a somewhat more indirect method for estimating the effectiveness of advertising. These types of response functions are often developed with the purpose of making budgetary decisions, although at least one response model has also been developed with the additional purpose of assessing alternative advertising strategies (Zufryden, 1978). However, the establishment of a relationship between sales and advertising that is accomplished inherently addresses the question of effectiveness.

Involvement

Involvement in terms of advertising and behavior modification is clearly an unresolved issue. Nord and Peter (1980) feel that behavior modification techniques apply whether there is high or low involvement on the part of the consumer in purchase situations.

However, Rothschild and Gaidis (1981) feel that behavior modification techniques are only applicable in low involvement purchase situations, and that when there is high involvement, the cognitive (consumer behavior oriented) processes take over.

Rothschild (1975) does believe strongly in the concept of involvement, and that it is a discriminator for predicting decision making styles. Involvement is presented as an important mediating variable between stimulus and response with implication for pursuing various advertising strategies.

Kassarjian, (1980) in reviewing the involvement concept in terms of a cognitive process, comes up with findings somewhat analogous with the belief of Rothschild and Gaidis (1981). There is agreement with past research that indicates under high involvement information processing and deliberate choice-making occurs, where under low involvement, information is received holistically, with choices being made without any high degree of awareness.

Swinyard and Coney (1978), however, found direct mail and personal canvassing had positive voter effects in a low involvement race, but not in a high involvement race. Krugman (1965) agrees and suggests advertising could influence low involvement behavior more

readily than high involvement behavior. This is somewhat conflicting in terms of Rothschild's (1975) findings.

Petty and Cacioppo (1980) found that message content, under high involvement, is the prepotent determinant of the amount of persuasion that occurs. Under low involvement, non-content factors such as the credibility or attractiveness of the message source are more important.

There is also disagreement concerning the conceptualization of involvement. Mitchell (1980) departs from other viewpoints and defines involvement as an internal state variable with motivational properties that are evoked by a particular stimulus. This differs from other conceptualizations which view involvement in terms of the type of processing that occurs during exposure to an advertisement. Batra and Ray (1983) conceptualize message response involvement as situational states characterized by the depth and quality of cognitive responses evoked by the message. This ties involvement closely to the advertising and communication process directly.

Clearly there is disagreement on the relationship between advertising's effectiveness and the involvement stated (high versus low). However, a definite relationship between advertising and involvement

is established making it an appropriate area to include in the framework.

Situation

Situation is a consumer behavior concept. However, its relevance to the area of behavior modification is apparent. Behavior modification involves alteration of the environment in order to influence behavior. Although many conceptualizations of situation are evident in the literature, there does seem to be agreement that situation is an environmental factor. Therefore, an examination of this area is appropriate in conjunction with the area of behavior modification. Initially, definitional viewpoints will be examined for evidence of environmental aspects of the conceptualization. The other approach the literature appears to be taking with regard to situation is the development of taxonomies or classifications of various types of situations. This area will also be examined.

Belk (1974b, 1975) defines situation as a locus in time and space. This is a conceptualization quoted throughout the literature. Belk (1974b) further elaborates on this conceptualization by defining situation as all the factors particular to a time and place of observation which do not follow from a knowledge of personal (intra-individual) and stimulus (choice

alternative) attributes, and which have a demonstrable and systematic effect on current behavior. Belk (1975) later links situation in a direct way to the environment indicating it is clear that situations and behavioral settings are subunits within an environment. To carry this linkage one step further (Srivastava, 1980), recent research clearly illustrates the importance of environmental influence in determining consumer choice (Belk, 1974a, 1974b, 1975; Srivastava, Shocker and Day, 1977; Srivastava, 1980).

Srivastava (1980) reviews the affect of environmental conditions on perceptions of product-markets to find that situational influences moderate consumer choice. Leigh and Martin (1981) state situation is a factor affecting consumer and marketing behavior. A behavioral response is included in an overall situation research paradigm, indicating it is the outcome variable representing the culminating influence of individual characteristics, and features of the objective (and/or psychological) environment. These findings appear to reinforce the relevance of situation to behavior modification.

In addition to conceptualizing situation, the development of a classification scheme for the various situations the consumer might encounter is attempted. Belk (1975) defines a classification scheme based on

direct behavior. Situations are classified by nature of the psychological processes to which they lead (Srivastava, 1980), or objective situations (Srivastava, 1980) where factors external to consumers lead to differences in elicited behavior. Srivastava, Shocker and Day (1977) illustrate the development of taxonomies in the objective sense when they form a usage-situational taxonomy for products used to freshen breath. Fennell (1975) develops a motivational typology presenting a taxonomy of motivating situations that would fall under the above category of psychological processes.

To summarize, it appears from evidence cited that by examining the conceptual formation and taxonomy development concerning situation, one can only come to the conclusion of Leigh and Martin (1981), that general situations are related in some way to behavioral response. This makes it a relevant area to examine and consider in the process of vicarious learning.

Summary and Conclusions

The purpose of this chapter is threefold. The first is to examine both clinical and other more general applications of behavior modification. The reason for the interest in behavior modification applications is to search for evidence of a broad enough practical application to include the possibility of advertising's

use of behavior modification techniques. A study of direct use of these techniques in advertising would be the best possible application, but this was not found. However, considering the expansion of behavior modification techniques from a clinical setting to cure behavior disorders to such uses as encouraging litter prevention and energy conservation, it does not appear advertising application would be too broad a use for the behavior modification techniques.

The second purpose of this chapter is to establish a firm relationship between psychology and advertising. This is to further validate the use of an area of psychology such as behavior modification in advertising. The literature reviewed demonstrates an extremely close relationship between psychology and advertising along with early recognition of the importance of the cognitive processes of the consumer. Once again, no actual study utilizing behavior modification in advertising was found.

The final purpose of this chapter is to present a process in the form of a framework representing the possible operation of vicarious learning, a type of behavior modification. This framework also serves as a guide in a literature review of each component to establish the level of research done in each area to

date. Each area was also examined for its relationship to advertising and found to be relevant.

The framework starts with a commercial stimulus in the form of modeling or demonstrating product use. The amount and kind of attention paid to the stimulus by the consumer determines the level of comprehension about operation of the product demonstrated in the commercial stimulus. Characteristics of the model influence the attention level of the consumer.

Once operation of the product is comprehended, the consumer must retain this information in order to complete the process by imitating the model shown in the commercial to use the product correctly. It is hypothesized that if a consumer comprehends product use and is able to use a product correctly as a result of watching a commercial demonstrating product use, the consumer will be more likely to purchase the product.

Level of involvement and situation are consumer behavior variables found to be very relevant to this vicarious learning process. They are represented as external factors because although they are not direct components of the process, they are related to the operation of the process as has been discussed.

It is surprising that with the number of commercials demonstrating product use that research confirming the effectiveness of this process has not been

conducted. Because of the high number of commercials using demonstration or vicarious learning, there must be a strong belief in the effectiveness of this technique. This study will attempt to verify the use of vicarious learning in advertising by establishing effectiveness. The framework presented will be tested in terms of the hypotheses presented in the next chapter.

CHAPTER III

OBJECTIVES, HYPOTHESES, AND METHODOLOGY

Introduction

In order to examine the effectiveness of vicarious learning in advertising, hypotheses were developed for testing in an experimental setting. These hypotheses address two basic research objectives. This chapter explains the procedure used to examine the effectiveness of vicarious learning in advertising in terms of research objectives, hypotheses, and methodology.

An appropriate product had to be chosen in accordance with the study. Since presenting the logic behind choosing the particular product (ATM) is helpful in understanding how the hypotheses will be tested to satisfy the research objectives, the product choice section will be presented first, followed by the research objectives, hypotheses, and methodology.

Choice of Product

It is important the product used in this study be acceptable on many levels. The product needs to be appropriate for a vicarious learning demonstration. It should be a product of interest to a target market that

would benefit from a commercial demonstration. Finally, to insure practical application of the results of the study, the industry from which the product is chosen should be interested in this particular type of promotion.

The product chosen actually provides a service, the automatic teller machine. The literature has been reviewed to determine the banking industry's interest and inclination to advertise the specific concern with automatic teller machines. The climate of the banking industry will be discussed along with any interest demonstrated in the promotion of the automatic teller machine (ATM).

Banks have at least a twenty-five year history of interest in promoting their financial services through television advertising. The interest has been on the increase with the deregulation that has brought a new era of competition to the banking industry. Characteristically, when competition is introduced to any industry, marketing becomes more important. The banking industry is a classic example of this type of situation.

This positive attitude toward the promotion of financial services is coupled with a concern of customer acceptance of the automation of services. This concern is demonstrated early (Williams, 1961) when talk of automation was in the air. Williams suggests banks both

inform and reassure customers for the best results. Banks then began to formulate definite plans for the promotion of automated services (Dean and Reistad, 1963).

There is also widespread concern for the customer's wants and needs in general, a new attitude for banks to have, that appears to have begun in the seventies. This is particularly evident when EFT (electronic fund transfer -- a means of transferring money by wire) became an issue with the consumer (Pugh and Ingram, 1978; Pastore, 1979; Berry, 1980). Concern is generated for the education of the consumer about EFTS (Vinson and McVandon, 1978), as well as consumer acceptance of EFTS (Berry, 1980 p. 53).

The ATM (automatic teller machine) received special attention, perhaps because it was one of the first EFTS services to come in direct contact with the consumer. The growth of the ATM has been phenomenal from a few machines per bank to entire networks of machines shared by several banks (Hardwick, 1981; St. John, 1980).

To summarize the overall situation, the banking industry appears both concerned about consumer acceptance of the ATM and interested in the promotion of the product. The public response to use of the machines has also been positive. Therefore, as far as the industry climate is concerned, the ATM appears to have been an appropriate product for use in this study. The only

remaining question is whether the ATM is appropriate to use in the vicarious learning technique.

In order to receive money when making a withdrawal from an ATM, the buttons must be operated correctly. Once the buttons are operated correctly, money will be dispersed. The vicarious learning technique involves observation of a model performing actions and receiving positive reinforcement for those actions. Hopefully, the observers will imitate the model's actions in the hopes of receiving the same positive reinforcement. In the case of the ATM, a commercial is necessary with an actor (model) demonstrating how to correctly withdraw money from the machine. Money (reinforcement) will be received for correctly operating the ATM. An audience (observers) will be watching the commercial. Hopefully, the audience will imitate the model by utilizing an ATM in the same manner as the model, completing the vicarious learning process.

The ATM appears to be appropriate as a product (service) for this study. It is a product of interest to the banking industry and one that can be used for vicarious learning.

Research Objectives

Demonstration of product use is a technique widely used in commercials. However, no evidence of research directly addressing the effectiveness of using demonstration in commercials was found. The objectives of this study reflect an interest in establishing the effectiveness of demonstration (vicarious learning) in commercials.

The two objectives both address the issue at hand (effectiveness of vicarious learning) and distinguish the two groups of hypotheses tested in this study. The first objective is to determine the effectiveness of the use of vicarious learning in advertising to educate the consumer in correct product usage. The specific purpose of this objective is to examine the ability of vicarious learning to teach the consumer how to use the product. This means developing a new behavioral response, one a consumer does not already possess. The first group of hypotheses will address this objective.

The second objective is to determine the usefulness of vicarious learning as an advertising technique in comparison with strictly presenting information about product use. Information sought in this study not only about the ability of vicarious

learning to educate a consumer in correct product use, but the effectiveness of vicarious learning as an advertising technique pitted against the strictly informative method. Many commercials present product information in a straightforward manner. Perhaps the better method would be to use vicarious learning instead. The second group of hypotheses will address this objective.

Hypotheses - Effectiveness of Use of Vicarious
Learning to Educate the Consumer
about Correct Product Use

This first group of hypotheses is specifically concerned with the ability of the vicarious learning technique to educate the consumer. The hypotheses in this group test the constructs comprehension/learning, imitation, and the external factors involvement and use situation. Use situation and involvement are somewhat extraneous concepts as was discussed in Chapter two. They are not directly involved in the vicarious learning process depicted in the framework, but are related areas of consumer behavior to the vicarious learning process. Since the vicarious learning process itself is an educational one affected by involvement and use situation, it is appropriate these two constructs be included in this group of hypotheses.

The first hypothesis examines the comprehension/learning construct. The first hypothesis deals with comprehension/learning of an audience viewing a commercial with the use of vicarious learning.

H₁: There is no difference in understanding (comprehension/learning) of product use by an audience after viewing a commercial with the use of vicarious learning and understanding (comprehension/learning) of product use of the audience before viewing the commercial with the use of vicarious learning.

This particular hypothesis addresses the comprehension issue. As previously stated, vicarious learning should be a useful technique for educating observers. This is especially true if the observers are totally unfamiliar with the information being presented. The fact a technique is actually being demonstrated with the use of a model should help aid in the learning process. This technique (vicarious learning) should be especially helpful as a teaching tool. Hopefully, therefore, this hypothesis will not be supported to illustrate comprehension of product use after viewing a commercial with the use of vicarious learning.

This hypothesis was tested with the use of a pretest as well as a posttest. Comprehension/learning is operationalized with the use of the construct understanding, an acceptable measure of comprehension/learning (Jacoby, Hoyer and Sheluga, 1980). Understanding is measured on a five point scale with alternatives ranging from strongly agree to strongly disagree including a neutral midpoint. Five statements that range from expressing strong understanding of how to withdraw cash from an ATM to no understanding of how to withdraw cash from an ATM are presented. (See appendix for questionnaire illustrating the operationalization of this and the remainder of the variables in the model).

H₂: There is no difference in imitative behavior of an audience after viewing a commercial with the use of vicarious learning and imitative behavior of the audience before viewing a commercial with the use of vicarious learning.

Imitative behavior refers here to the ability to go through the physical motions of cash withdrawal correctly. Imitative behavior should be different after the audience views the commercial with vicarious learning. Imitation was measured on a five point scale from strongly agree to strongly disagree with a neutral

midpoint. Five statements describing ability to withdraw cash with no difficulty to inability to withdraw cash are listed. Imitation is described by Bandura (1965) as being measured by enabling participants to exhibit the imitative behavior. Since this would jeopardize the internal validity of the experiment, beliefs about behavior (Dillman, 1978) is used to operationalize the variable imitation. The five statements described above question the respondent's beliefs about whether or not withdrawal of cash from an ATM can physically be done by the respondent.

H₃: There is no difference in involvement with the product of the audience after viewing a commercial with vicarious learning and involvement with the product of the audience before viewing a commercial with vicarious learning.

Involvement is an external factor whose relationship to the vicarious learning process is examined in this study. It is included in the model representing vicarious learning as a relevant consumer behavior variable that could be an area of interest in the vicarious learning process. The hypothesis stated reflects this attitude of inquiry regarding what

relationship, if any, involvement has to vicarious learning.

Involvement is appropriately measured by importance of the product (Kassarjian, 1980). Accordingly, statements ranging from extremely important to no importance regarding the use of the ATM are presented. The same five point scale as previously described is used for the respondent.

H₄: There is no difference in use situation of the audience after viewing a commercial with vicarious learning and use situation of the audience before viewing a commercial with vicarious learning.

Situation is another area in consumer behavior perceived to have some relevance to vicarious learning. The possibility of this relevance is examined with this hypothesis.

The five point scale is once again used with seven statements describing various situations in which respondents could possibly imagine using an automatic teller machine.

Hypotheses - Comparison of Vicarious Learning with Strictly Informative Technique

The testing of this second group of hypotheses hopefully will demonstrate the superiority of vicarious learning over the strictly informative technique.

H₅: There is no difference in attending behavior of the audience of a commercial with the use of vicarious learning and attending behavior of the audience of a commercial without vicarious learning.

There should be support for vicarious learning as an advantageous technique for achieving positive attending behavior. This is one of the important problems the advertising industry faces. It is very difficult to obtain and maintain the attention of an audience.

Attention has been measured in the past with observation, specifically observation of children's attending behavior (Ward, Robertson, Wackman, 1971). Since observation of an entire classroom (approximately 45 students) for attending behavior is impractical, beliefs about behavior (Dillman, 1978) will be used. Students responded to the same five point scale as illustrated earlier with four statements indicating

watching all the commercial to watching none of the commercial.

H₆: There is no difference in understanding (comprehension/learning) of product use by the audience of a commercial with vicarious learning and understanding (comprehension/learning) by the audience of a commercial without the use of vicarious learning.

The intent here is to examine the effectiveness of vicarious learning over the strictly informative technique with regard to comprehension/learning.

Vicarious learning will hopefully be indicated as the superior technique for teaching consumers how to operate the ATM. Operationalization of this variable has been discussed (See H₁).

H₇: There is no difference in retention of product use by the audience of a commercial with vicarious learning and retention of product use by the audience of a commercial without vicarious learning.

Retention of correct product use is necessary for imitation. Therefore, retention is an important step in the model.

Retention has been best described by the ability to recall how the product operates (Mitchell, 1981; Leavitt, 1968; Saegert, 1979). Therefore, to operationalize retention, seven statements about ATM operation appear with the five point scale discussed earlier. Some statements correctly describe operation of the ATM according to the commercial, and some do not. Retention was indicated by the way the respondent reacted to the statements. Agreement with a false statement does not indicate a high level of retention.

H₈: There is no difference in imitative behavior by the audience of a commercial with vicarious learning and imitative behavior by the audience of a commercial without vicarious learning.

Support possibly will be evident for vicarious learning as the superior method for producing imitative behavior on the part of the audience. It is important correct imitative behavior be established, otherwise purchase behavior most likely will not result. If the respondent cannot imitate the model in the operation of the ATM, there is no way the respondent can ever use the ATM.

Operationalization of imitation has already been described (See H₂).

H₉: There is no difference in purchase behavior of the audience of a commercial with vicarious learning and purchase behavior of the audience of a commercial without vicarious learning.

Ultimately, vicarious learning should be indicated as the superior method in encouraging purchase behavior. Vicarious learning should, through the demonstration, give the respondent the knowledge of ATM operation and the ability to imitate the model in operation of the machine. This process should result in purchase behavior (intent to use teller card).

The intent to use a teller card, or behavioral intention is a way to operationalize purchase behavior (Dillman, 1978; Swinyard and Ray, 1977; Thompson, 1962; Christian, 1961). Five statements ranging from indicating intent to apply for a teller card in a week to no intention to ever apply for a teller card are used. The same five point scale from strongly agree to strongly disagree with a neutral point is used.

Study Design

Much of academic advertising research is conducted with the use of an experiment. The question of effectiveness is generally addressed in advertising

research, and the best method of establishing a cause and effect relationship is with experimentation. Since the purpose of this study is to establish a cause and effect relationship between the use of vicarious learning in advertising and purchase behavior, this is one reason an experiment is the most appropriate method to gather data. There are many examples of the use of an experiment to establish the effectiveness of advertising in producing sales (Rao and Miller, 1975; Clarke, 1976; Kyle, 1978; Leone, 1983).

Internal validity is necessary to establish a true cause and effect relationship. Since the establishment of a cause and effect relationship is necessary in this study, preservation of a high level of internal validity is essential. This is another reason the experiment is particularly well suited to this situation.

The Solomon four group design will be used.

This is the format:

Group 1	0	X	0	with vicarious learning
Group 2	0		0	without vicarious learning
Group 3		X	0	with vicarious learning
Group 4			0	without vicarious learning

There will be four groups as illustrated above. Groups one and three each were shown a commercial with vicarious learning (demonstration). Groups two and four each

were shown a commercial that is strictly informative without vicarious learning. Groups one and two had a pretest while Groups three and four did not. The purpose of the Solomon four group design is to determine pretest effects, if any.

Groups one and two received a pretest questionnaire before viewing the commercial that will determine their intent to use teller cards (purchase behavior) and information regarding other variables of interest from the framework discussed in Chapter two (comprehension/learning, imitation, involvement and use situation). After viewing the commercial with vicarious learning (Group one) or without vicarious learning (Group two) each group was surveyed to determine intent to use teller cards in addition to other variables of interest explained in the framework in Chapter two (attending behavior, comprehension/learning, retention, imitation, level of involvement and use situation).

The variables of prime interest are:

independent variable - use of vicarious
learning in advertising.

dependent variable - purchase behavior
(main dependent variable)

other variables of
interest that will also
be affected:
(other dependent variables)

attention

comprehension/learning

retention

imitation

external factors

level of involvement

situation

Commercial Preparation

In order to obtain the proper commercials for the experiment, they had to be produced. It was necessary to have two parallel commercials, the exception being one demonstrated (with vicarious learning) the use of the ATM, while the other did not. Since it was unfeasible to locate two commercials of this nature in existence, they had to be produced.

The College of Communications at the University of Tennessee has the equipment and personnel to produce commercials. It is with their assistance that two appropriate spots were made. A producer who is on the

staff of the College of Communications was assigned to the project.

The first step in making a commercial is to decide what type the commercial will be. It was decided that these two spots should be of a problem solving nature; a commercial that presented a typical problem (in this case the bank being closed and the customer needing ready cash) with the use of the product (in this case the ATM) as the solution. Once this is decided, a storyboard, which is a pictorial frame-by-frame representation of the commercial is designed. Underneath each frame is the script or dialogue. The storyboard was revised several times with the help of the commercial's producer and professors in the Department of Advertising in the College of Communications at the University of Tennessee.

The spokesperson for the commercial needed to possess several appropriate characteristics so the college student audience would respond to him/her in the most positive manner. A review of the model characteristics literature suggests an authoritative, attractive, person would produce the best response. The model needed to be far enough away from the average college (18-22) age student to be perceived as authoritative, but not too old so the audience could still identify with the spokesperson. Attractive models are generally met with a

better response (Baker and Churchill, 1977). It would also be advantageous to hire a professional rather than use an amateur, if at all possible.

With the help of the producer, an attractive male, age 39 with professional acting experience was located. After a trial reading with the producer present, the man was hired to do the two spots. The man was told to wear a suit to be assured of appearing authoritative. Model characteristics are held constant in this experiment, so the same spokesperson did both commercials (one with vicarious learning, and one without).

To make the commercial as realistic as possible, an actual automatic teller machine was used. One of the local banks agreed to let the commercial be made using their ATM. Because some students may have had prior experience (good or bad) with a particular bank, in order not to prejudice the students' responses, it was felt necessary to disguise the true identity of the ATM. Therefore, a professional artist at the College of Communications designed signs called the ATM "Quick Cash" machine.

In order to obtain immediate feedback so that as soon as a scene was shot it could be shown for approval or disapproval, videotape was chosen over film. It is also felt that since videotape is shown on a TV

screen just like commercials are seen, it would be a more realistic presentation in the experimental setting.

It was decided to start shooting the commercial at 5:00 p.m. on a Sunday. This should be a time of decreased use of the ATM and nightfall would be apparent, a typical time when a bank would be closed and a time a person could possibly need cash. The actor arrived wearing a suit, and the producer was assisted by two technicians to help set up the equipment.

The commercial was shot at two locations. One location was in a doorway so the actor could try to open the closed door to the bank to get cash (See Storyboard in Appendix). The other was at the ATM where the actor did one shot demonstrating how to get cash from the machine and receiving money (commercial with vicarious learning). The other shot was of the actor merely describing how to get money from the machine (strictly informative commercial without vicarious learning). The scene of the actor trying to open the "closed" door of a bank because he needs cash appeared in the front of both commercials. This was the problem solving commercial format. The problem is the bank is closed when cash is needed and the solution to go to the ATM for the cash.

As the commercial shooting proceeded, each scene was viewed to make sure it was appropriate to the study. Total shooting time was approximately two hours.

The producer edited the commercial immediately and dubbed the exact voice of the actor on both commercials to make sure they were the same. After editing, both commercials were viewed simultaneously to make sure they were both the same with the exception of the presence or absence of vicarious learning.

Sample

Due to the nature of the study and strong interest in internal validity, a sample of UT business classes was used. The sample consisted of basic marketing classes and both basic transportation and upper division transportation classes. Upper division marketing classes may be somewhat biased because of to their strong interest in marketing which includes advertising; therefore, those classes were excluded from the sample.

The sample also consisted of participants who had never used a teller card, since the purpose of this study is to investigate the effectiveness of vicarious learning in educating a consumer about correct product usage. This means vicarious learning is used to develop a new behavioral response, not a response which is already present in the participant's behavioral repertoire.

Lab Procedures

Once the experimenter was introduced to the class being used, a procedure to follow was explained. The study was described as a product use study. It was felt this was an adequate cover story since many of the questions asked could also feasibly be asked in a product use study. If the class was designated as part of the group to receive a pretest questionnaire, the students were asked to fill out the questionnaire and told all answers were confidential and that the information would be statistically analyzed, further assuring anonymity. In addition, the students were not asked for a name on the questionnaires, therefore, there should have been confidence that anonymity was preserved. Students were asked to put a check in the upper right hand corner if the student had participated in this study in another class. Then the questionnaires were passed out and the students filled them out. This self-administered questionnaire is appropriate for the study and necessary due to the large groups of students used at one time.

After a few minutes, students were asked to raise their hands if they were still working. When all the students were finished, it was asked that the questionnaires be passed up front and the experimenter collected them.

All the students in the classroom participated in the study by filling out a questionnaire. The sample consisted only of those participants (students) who had never used a teller card. There is a screening question in the front of the questionnaire to ascertain whether the student had ever used a teller card or not. It was felt that unless all the students in the classroom physically filled out a questionnaire and participated in the experiment, the results may be biased and hypothesis guessing may result. It also provided a much more orderly, controlled, and consistent atmosphere if all the students in a classroom participated.

The experimenter then asked the students to watch the "film" at the front of the room. In the front of the room was a videoplayer machine attached to a TV. The commercial was shown. Then the students were asked to fill out the second questionnaire and reminded of the confidentiality and necessity of putting a check in the upper right hand corner if the student had participated in this study in another class. Once the questionnaires were collected, the students were thanked for their cooperation and the professor or graduate student in charge of the class was thanked for letting the experimenter come into the class.

Questionnaire Construction

The questionnaire is set up to measure variables in the framework (attention, comprehension/learning, retention, imitation, involvement, and situation). These variables are measured in accordance with the literature as described in the hypothesis section. The first draft of the questionnaire was pretested on four basic marketing classes. During the pretest, comments were solicited from students regarding the content of the questionnaire. As a result of the pretest, some changes were made in the wording of the instructions as well as the wording and number of statements under each variable.

Manipulation Check

In order to determine that the participants in the experiment do actually perceive a difference in the two commercials (one with vicarious learning and one without vicarious learning) a manipulation check was done on a class of 31 basic marketing students. The class was told to watch the two "films" (the commercials were identified to the students as films so results would not be biased) that were to be shown. The class filled out a sheet that asked the students to observe the two films and then describe the difference between film number one

and film number two. All thirty-one students correctly described the difference as the demonstration of the use of the ATM in film number one versus a lack of demonstration of the use of the ATM in film number two.

The manipulation of the independent variable (vicarious learning) appears to be operationalized. Therefore, the two commercials appeared suitable to use in conducting the experiment.

CHAPTER IV

ANALYSIS AND RESULTS

Introduction

Data analysis presented in this chapter gives information enabling an overall quantitative evaluation of the process of vicarious learning. Data was collected using the methodology described in Chapter III. The data was examined on many levels for the various purposes described below.

The measurement instrument (the questionnaire) is discussed and analyzed in terms of reliability and validity. An examination of the data to determine such characteristics as distribution, and consistency is discussed with the use of frequencies and crosstabs as a technique. From this analysis a sample analysis with the use of the chi square statistic follows, which examined such characteristics of the sample as age, sex, income, and other demographics.

The T-test test is the technique that was used to examine the possibility of a pretesting effect. This examination was possible due to the Solomon four group design that was used. The T-test was also used to directly test the hypotheses.

In order to test various constructs specified in the framework (Model) representing vicarious learning, multiple discriminant analysis was employed. Pearson correlations were also used to examine the model and predictive validity.

Analysis of Measurement Instrument

The measurement instrument is an important aspect of data gathering to ascertain the effectiveness of vicarious learning. The instrument must measure the constructs represented in the process of vicarious learning accurately. In order to ascertain the accuracy of the instrument (questionnaire), reliability and validity were assessed.

The creation of the five point scales measuring the constructs in the framework was discussed in Chapter III. There are several items (variables) for each of the constructs. These scales will be examined with regard to their reliability. Validity will also be discussed.

Coefficient alpha was calculated for all the scales as one reliability measure. The calculations are presented in Table 1. All are well over the .6 considered acceptable (Overall and Klett, 1972) with the exception of the scale measuring the construct attention. However, as noted on the table, the removal of one of the items on the scale would raise the overall alpha to .58,

TABLE 1
COEFFICIENT ALPHA BY SCALE

Construct Measured	Coefficient Alpha
Attention	.19
Comprehension/Learning	.70
Retention	.73
Imitation	.70
Intent to Purchase	.74
Involvement	.86
Situation	.86

close enough to the acceptable level of .6 deemed as a standard.

A second measure of reliability used was item-to-total correlation. This gives an indication of the correlation of each item with the total scale score indicating internal consistency. An acceptable level is considered between .4 and .6 (Van Liere, 1983). The summary table (Table 2) indicates general results for each scale; for specific results for each variable, see the appendix (Tables A-1 through A-7). It should be noted that the low values are generally for only one variable on each scale. The majority of values fall between .4 and .6 and

TABLE 2
ITEM-TO-TOTAL RELIABILITY -
SUMMARY OF RESULTS

Construct	Range of Correlations of Scale
Attention	-.12 through .41
Comprehension/Learning	.14 through .69
Retention	.14 through .71
Imitation	.25 through .65
Intent to Purchase	.37 through .58
Involvement	.62 through .75
Situation	.55 through .67

above. Above .6 is considered an even stronger indication of reliability. All scales, with the exception of the one measuring the construct attention indicate a fairly acceptable level of reliability. The conclusion can therefore be reached that there is an acceptable level of reliability with the measurement instrument (questionnaire) used.

The issue of face validity was addressed by several methods. The questionnaire was shown to marketing and advertising experts (members of the committee) with each construct to be measured identified above each scale. The scales were formed from guidelines

in the literature as explained in Chapter III. In addition, comments were solicited from the pretest group of students on the questionnaire. The conclusion was reached that the questionnaire appeared valid. Predictive validity, where the relationships between the constructs tend to validate (or invalidate) the model, is examined in the section evaluating the framework (model) of the process depicting vicarious learning.

Sample Characteristics

The sample consisted of University of Tennessee business students. Basic marketing, basic transportation, and upper division transportation classes comprise the sample. Upper division marketing classes were not used due to possible bias because of the extensive training these students receive in the marketing area. Since this study involved the use of commercials, the inclusion of upper division marketing students seems inappropriate. Therefore, these students are not part of the sample.

The target of 130 was exceeded with a total of 187 students in the sample. Each of the four groups (from the Solomon four group design) has at least 45 students, satisfying the requirement that $n \geq 30$ for performance of the T-test. The sample size must be two to three times (Lee, 1981) the number of predictor

variables in order to be able to use discriminant analysis. The sample size well exceeds these limitations.

The data are organized into tables. There are four groups (from Solomon four groups design). Two pretest groups are also given a number. The following notation will be used on many of the tables that follow in this chapter and in the appendix to present the information:

Group 1 = pretest with vicarious learning.

Group 2 = posttest (this group has a pretest)
with vicarious learning.

Group 3 = pretest without vicarious learning.

Group 4 = posttest (this group has a pretest)
without vicarious learning.

Group 5 = posttest only with vicarious
learning.

Group 6 = posttest only without vicarious
learning.

In other words, from the Solomon four group design, the groups are numbered as follows:

O_1	X	O_2	with vicarious learning
O_3		O_4	without vicarious learning
	X	O_5	with vicarious learning
		O_6	without vicarious learning

The chi square statistic was employed to determine if the four groups were equivalent. The results (see Table 3) suggest this is the case with the

TABLE 3
CHI-SQUARE RESULTS
SUMMARIZED

Demographic	Chi-Square Statistics	Similar Proportions ^a
Class ^b	9.12	Yes
Sex	7.93	No
Income	6.00	Yes
Age	10.96	Yes
Home State	6.05	Yes

^aOne tail probability; .05 used as the criteria.

^bThere is is question of validity of this calculation. Many of the expected values calculated were below 1, considered unacceptable for a chi-square calculation. However, the results are reported as calculated.

exception of sex of the groups. At the .05 level of significance, the sample proportions are similar with regard to class, income, age, and home state. That the groups are not similar (at the .05 level) with regard to sex is not totally unexpected considering the change of enrollment composition in business schools in recent years. Women now make up a larger percentage of students in business schools than in previous years; however, this upward trend has yet to stabilize. In addition, if the .10 criteria is used, the sample proportions with regard to sex are similar. Therefore, these results are considered acceptable.

Technically, there is some question about the validity of the chi square statistic computed for class. Some of the expected values computed were less than one, a condition under which there is a question whether chi square should be used. However, examination of the distribution of the groups (see Table A-8 in appendix) suggests the chi square results are indicative of equal proportions.

In addition to this examination of the sample, frequencies and crosstabs were also performed on the data to examine the consistency and characteristics. The data appears to be basically consistent as was born out by the use of coefficient alpha and the item to total coefficients. Next an examination of the constructs (those

presented in the framework, attention, comprehension/learning, retention, imitation, intent to purchase, level of involvement, and situation) as measured by the variables (items on the questionnaire) will be presented to determine pretest effect, if any.

Examination of Pretest Effect

The Solomon four group design enables the examination of the data for a pretest effect, if any. There is always concern on the part of the experimenter that exposure to a pretest, while often necessary to gain information (as is the case in this study), will bias the respondents and cloud the results. There is concern there will be a learning effect as a result of exposure to the pretest. The Solomon four group design provides for comparison of treatment groups, both with and without a pretest, and comparison of no treatment groups with and without a pretest. Table 4 presents a summary of the results of the T-tests performed to determine a pretest effect. Detailed results variable by variable are presented in the appendix (see tables A-14 through A-23).

The results indicate no pretest effect that would substantially interfere with the results. Only on two constructs, comprehension/learning and imitation are there any indication of a pretest effect. In each case the pretest effect is only on one variable. Considering

TABLE 4
SUMMARY OF PRETEST EFFECT

Construct	Pretest Effect
Comprehension/Learning	Slight effect on one variable
Imitation	Definite effect on one variable
Intent to Purchase	None
Involvement	None
Situation	None

the number of variables and constructs, the overall pretest effect can be considered slight. This effect is taken into consideration in the analysis.

The hypotheses will be examined one by one in chronological order according to the two groups presented in Chapter III. First, vicarious learning as a tool for educating the consumer is examined. To further explore the vicarious learning effect, the second group of hypotheses examine the comparison of vicarious learning and the strictly informative technique. Advertisers are especially interested in educating the consumer in this age of increasingly complex products. The strictly informative technique is often used in commercials today. Therefore, the results from these two groups of

hypotheses should be of acute interest to advertisers. Each hypothesis is listed in operational form. All hypotheses are stated in the null format. The .05 level will be used as a criteria for failing to reject hypothesis.

Effectiveness of Vicarious Learning
in Educating the Consumer

H₁: There is no significant difference in understanding (comprehension/learning) of product use by an audience after viewing a commercial with the use of vicarious learning and understanding (comprehension/learning) of product use of the audience before viewing the commercial with the use of vicarious learning.

Table 5 presents the T-test for this hypothesis. There is significant difference between the pretest and posttest groups with regard to understanding as demonstrated by the results on the table. The variable completely understand is an elevated level of significance due to the pretest effect discussed earlier (see Tables A-14 and A-15). The remainder of the variables measuring understanding are free of any pretest effect.

TABLE 5
MEAN GROUP COMPARISONS - H_1 FOR
COMPREHENSION/LEARNING
GROUPS 1 AND 2

Variable	Means ^a		T Value	Two-Tail Probability
	Group 1	Group 2		
(Levels of Understanding)				
Completely Understand	2.76	3.89	-4.08	.000
Almost Completely Understand	2.76	3.33	-2.25	.027
Somewhat Understand	3.20	3.24	- .18	.859
Barely Understand	3.39	3.85	-2.07	.042
Do Not Understand	3.67	4.35	-2.79	.006

^aOn a 5 point scale, 5 indicates highest level of understanding, 1 the lowest level of understanding for all variables.

The results seem to demonstrate vicarious learning does increase understanding of ATM use until further analysis is made. When the results of H₆ are examined comparing groups 2 and 4 on comprehension/learning (two posttest groups with a pretest), no significance was found. This suggests the increased understanding indicated in Table 5 is a result of exposure to a commercial, not the result of exposure to a commercial with vicarious learning. Therefore, although technically from examining the results obtained in Table 5, H₁ can be rejected, further analysis does not indicate the significant results are due to the vicarious learning effect.

This result suggests advertisers could possibly place too much emphasis on demonstration to enable an audience to understand the operation of a product. The next hypothesis examines how imitative behavior is affected by vicarious learning.

H₂: There is no significant difference in imitative behavior of an audience after viewing a commercial with the use of vicarious learning and imitative behavior of the audience before viewing a commercial with the use of vicarious learning.

Table 6 displays the results of T-tests for H_2 concerning imitation. There is a high level of significance for all variables measuring imitation. However, the variable measuring the ability to withdraw cash with no difficulty reflects a pretest effect as already discussed. However, this pretest effect is indicated only for that one variable.

The results obtained for H_8 comparing groups 2 and 4 on imitation indicate the significance demonstrated in Table 6 is due to the effect of a commercial, and not due to the use of vicarious learning. Groups 2 and 4 are posttest groups, one with vicarious learning and one without. Both groups had a pretest. There are no significant differences here indicating the increase in imitative behavior in Table 6 is due to the commercial effect, and not the vicarious learning effect. Therefore, technically H_2 can be rejected although the case for vicarious learning's usefulness is not really supported.

Once again it appears advertisers could place too much importance on the demonstration of a product to produce imitative behavior. The commercial effectiveness demonstrated does indicate commercials are effective in producing imitative behavior. Involvement with the product is examined next.

TABLE 6
MEAN GROUP COMPARISONS - H₂ FOR
IMITATION
GROUPS 1 AND 2

Variable	Means ^a		T Value	Two-Tail Probability
	Group 1	Group 2		
Could Withdraw Cash - No Difficulty	2.70	3.74	-3.77	.000
Could Withdraw Cash - Small Amount of Difficulty	2.91	3.48	-2.46	.016
Could Withdraw Cash - Large Amount of Difficulty	3.41	3.93	-2.69	.009
Could Withdraw Cash - Extremely Large Amount of Difficulty	3.52	4.05	-2.97	.004
Could Not Withdraw Cash	3.83	4.50	-3.10	.003

^aOn a 5 point scale, 5 indicates highest level of imitation, 1 the lowest level of imitation for all variables.

H₃: There is no significant difference in involvement with the product of the audience after viewing a commercial with vicarious learning and involvement with the product of the audience before viewing a commercial with vicarious learning.

Table 7 reveals no significant difference between the two groups indicating acceptance of H₃. Involvement is a peripheral area of investigation, not directly located in the framework, so these results are not surprising. The results suggest advertisers should not expect an increase in product involvement due to the use of vicarious learning in a commercial. The effect of vicarious learning on use situation is now examined.

H₄: There is no significant difference in the use situation of the audience after viewing a commercial with vicarious learning and use situation of the audience before viewing a commercial with vicarious learning.

The other external or peripheral area examined is use situation. H₄ is supported considering the results indicated in Table 8. Once again, this is a related area to the vicarious learning process, not an integral part of the operation of vicarious learning.

TABLE 7
MEAN GROUP COMPARISONS - H₃ FOR
INVOLVEMENT
GROUPS 1 AND 2

Variable	Means ^a		T Value	Two-Tail Probability
	Group 1	Group 2		
Use of ATM - Extremely Important	1.87	2.00	- .64	.527
Use of ATM - Very Important	1.87	2.11	-1.23	.220
Use of ATM - Somewhat Important	2.26	2.61	-1.58	.117
Use of ATM - Almost Not Important	2.59	2.67	- .41	.686
Use of ATM - Not Important	2.78	3.13	-1.31	.195

^aOn a 5 point scale, 5 indicates highest level of involvement, 1 the lowest level of involvement for all variables.

TABLE 8
MEAN GROUP COMPARISONS - H₄ FOR
SITUATION
GROUPS 1 AND 2

Variable	Means ^a		T Value	Two-Tail Probability
	Group 1	Group 2		
Use ATM Instead of Bank	3.00	2.83	.66	.509
Use ATM During Banking Hours	3.33	3.28	.18	.854
Use ATM For Emergency Situations	4.13	3.87	1.39	.167
Use ATM To Determine Balance	3.63	3.61	.09	.926
Use ATM To Transfer Money	3.09	3.11	- .09	.932
Use ATM For Emergency Deposits	3.69	3.61	.39	.697
Can't Imagine Ever Using ATM	4.02	3.93	.38	.701

^aOn a 5 point scale, 5 indicates propensity toward using ATM in various situations named. In the last variable, 5 indicates propensity to use ATM in some situation. One is the lowest end of the scale in all cases.

Therefore, advertisers should not expect an audience that views a commercial with vicarious learning to show an increase in the number of situations a consumer would use the ATM. The next group of hypotheses compare vicarious learning and the strictly informative technique. The first type of behavior to be examined with regard to comparison of the two techniques is attending behavior.

Comparison of Vicarious
Learning with Strictly
Informative Technique

H₅: There is no significant difference in attending behavior of the audience of a commercial with the use of vicarious learning and attending behavior of the audience of a commercial without vicarious learning.

Tables 9 and 10 address this hypothesis. Table 9 is a comparison of groups with the pretest, and Table 10 the groups without. Even though the pretest effects have already been represented (see Tables A-14 through A-23) it is more complete to present both sets of group comparisons. This will be done for all constructs.

The only significant difference on both tables is for the variable watched most of the commercial.

TABLE 9
MEAN GROUP COMPARISONS - H₅ FOR
ATTENTION
GROUPS 2 AND 4

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 4		
Watched All Of Commercial	4.43	4.42	.04	.970
Watched Most Of Commercial	3.07	2.53	1.97	.052
Watched Very Little Of Commercial	4.24	4.35	- .77	.444
Watched None Of Commercial	4.63	4.59	.31	.758

^aOn a 5 point scale, 5 indicates the highest level of attention, while 1 indicates the lowest level of attention for all variables.

TABLE 10
MEAN GROUP COMPARISONS - H₅ FOR
ATTENTION
GROUPS 5 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 5	Group 6		
Watched All Of Commercial	4.51	4.23	1.49	.14
Watched Most Of Commercial	2.80	3.38	-2.15	.034
Watched Very Little Of Commercial	4.29	3.98	1.64	.105
Watched None Of Commercial	4.69	4.74	- .49	.624

^aOn a 5 point scale, 5 indicates the highest level of attention, while 1 indicates the lowest level of attention for all variables.

Interestingly, this is the variable that needs to be removed from the scale (as indicated on Table 1, page 115) to raise the coefficient alpha from .19 to .58. Depending upon the reliability standards that are considered acceptable (which often varies widely depending upon the situation) this result may or may not be indicative of the effectiveness of vicarious learning in increasing attending behavior. Another problem that makes the results questionable is the means on Table 10. The mean response for the group with vicarious learning is lower than the mean response without vicarious learning. This indicates a higher level of attention for the group without vicarious learning.

Due to the suspicious nature of the results obtained in this construct, and the fact only one variable in the scale tested as significant, H_5 is not rejected, indicating no strong indication vicarious learning increases attending behavior. Advertisers are always interested in techniques that will increase attending behavior since getting an audience to pay attention to commercials is imperative to the commercial's success. However, vicarious learning does not appear to be a helpful technique according to these results.

H_6 : There is no significant difference in understanding (comprehension/learning) of

product use by the audience of a commercial with vicarious learning and understanding (comprehension/learning) by the audience of a commercial without the use of vicarious learning.

The results in Tables 11 and 12 do not demonstrate much indication that vicarious learning improves understanding significantly on how to operate an ATM when compared with the strictly informative technique. Therefore, H_6 is not rejected. It appears vicarious learning is not a good technique to teach an audience how to operate a teller machine. Retention, another construct represented in the vicarious learning process, is examined next.

H7: There is no significant difference in retention of product use by the audience of a commercial with vicarious learning and retention of product use by the audience of a commercial without vicarious learning.

Although one variable measuring the construct retention is almost significant at the .05 level (.067 - speak into ATM, overall, there is not much support to indicate vicarious learning is a good technique to use for helping the consumer remember product use. Tables 13 and 14 present the results. Therefore, H_7 is not rejected.

TABLE 11
MEAN GROUP COMPARISONS - H₆ FOR
COMPREHENSION/LEARNING
GROUPS 2 AND 4

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 4		
(Levels of Understanding)				
Completely Understand	3.89	3.98	-.39	.695
Almost Completely Understand	3.33	3.49	-.74	.462
Somewhat Understand	3.23	3.22	.07	.947
Barely Understand	3.85	4.08	-1.38	.172
Do Not Understand	4.35	4.53	-1.23	.221

^aOn a 5 point scale, 5 indicates the highest level of understanding, 1 indicates the lowest level of understanding for all variables.

TABLE 12
MEAN GROUP COMPARISONS - H₆ FOR
COMPREHENSION/LEARNING
GROUPS 5 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 5	Group 6		
(Levels of Understanding)				
Completely Understand	3.31	3.17	.52	.607
Almost Completely Understand	3.44	3.17	1.12	.265
Somewhat Understand	3.33	3.21	.45	.651
Barely Understand	3.84	4.00	- .78	.436
Do Not Understand	4.45	4.34	.70	.487

^aOn a 5 point scale, 5 indicates the highest level of understanding, 1 indicates the lowest level of understanding for all variables.

TABLE 13
MEAN GROUP COMPARISONS - H₇ FOR
RETENTION
GROUPS 2 AND 4

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 4		
ID Number Entered	4.59	4.49	.75	.457
Card Inserted	4.59	4.61	- .25	.804
Machine Has Voice	4.17	3.82	1.62	.109
Machine Gives Cash	4.35	4.49	-1.00	.321
Speak Into ATM	4.72	4.47	1.85	.067
Push Buttons	4.52	4.57	-0.38	.704
Machine Returns Card	4.48	4.59	-0.87	.385

^aOn a 5 point scale, 5 indicates the highest level of retention, 1 indicates the lowest level of retention for all variables.

TABLE 14
MEAN GROUP COMPARISONS - H₇ FOR
RETENTION
GROUPS 5 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 5	Group 6		
ID Number Entered	4.31	4.53	-1.21	.231
Card Inserted	4.67	4.66	.07	.946
Machine Has Voice	4.02	3.79	.88	.380
Machine Gives Cash	4.31	4.36	- .27	.788
Speak Into ATM	4.76	4.62	1.36	.177
Push Buttons	4.67	4.51	1.46	.149
Machine Returns Card	4.69	4.49	1.67	.098

^aOn a 5 point scale, 5 indicates the highest level of retention, 1 indicates the lowest level of retention for all variables.

Retention of correct product use as represented in the vicarious learning process is imperative if the consumer is to be able to use the product in the future. From the results represented here, it appears vicarious learning is not a good technique to influence retention of product use. The effectiveness of vicarious learning in producing imitative behavior (hopefully the audience will want to imitate the model in the commercial and use the ATM as indicated) is examined with the testing of H_8 .

H_8 : There is no significant difference in imitative behavior by the audience of a commercial with vicarious learning and imitative behavior by the audience of a commercial without vicarious learning.

H_8 is not rejected in accordance with the results illustrated in Tables 15 and 16. Therefore, vicarious learning is not indicated as a good technique to use in encouraging imitative behavior. Advertisers should not use vicarious learning with the expectation that the audience that observes the commercial will imitate the model's (in the commercial) actions.

The final hypothesis (H_9) examines the effect of vicarious learning on encouraging purchase behavior on the part of the audience observing the commercial. In this case that refers to obtaining a teller card.

TABLE 15
MEAN GROUP COMPARISONS - H₈ FOR
IMITATION
GROUPS 2 AND 4

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 4		
Could Withdraw Cash - No Difficulty	3.74	3.71	.10	.921
Could Withdraw Cash - Small Amount of Difficulty	3.48	3.47	.04	.968
Could Withdraw Cash - Large Amount of Difficulty	3.93	4.02	- .54	.592
Could Withdraw Cash - Extremely Large Amount of Difficulty	4.09	4.29	-1.45	.151
Could Not Withdraw Cash	4.50	4.57	- .52	.604

^aOn a 5 point scale, 5 indicates the highest level of imitation, 1 indicates the lowest level of imitation for all variables.

TABLE 16
MEAN GROUP COMPARISONS - H₈ FOR
IMITATION
GROUPS 5 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 5	Group 6		
Could Withdraw Cash - No Difficulty	2.84	2.89	- .18	.856
Could Withdraw Cash - Small Amount of Difficulty	3.27	3.29	- .13	.898
Could Withdraw Cash - Large Amount of Difficulty	3.76	3.74	.06	.953
Could Withdraw Cash - Extremely Large Amount of Difficulty	4.20	4.21	- .09	.928
Could Not Withdraw Cash	4.49	4.40	.49	.622

^aOn a 5 point scale, 5 indicates the highest level of imitation, 1 indicates the lowest level of imitation for all variables.

H₉: There is no significant difference in purchase behavior of the audience of a commercial with vicarious learning and purchase behavior of the audience of a commercial without vicarious learning.

Tables 17 and 18 present the results for the intent to purchase construct. The two variables might apply for card and think will never apply for card on Table 17 are near misses for significance, but the means should be highest for group 2 to indicate vicarious learning encourages purchase behavior. Therefore, H₉ is not rejected, indicating advertisers should not expect the use of vicarious learning in commercials to encourage the audience to apply for teller cards. Since the hopeful net result of any commercial is to encourage purchase behavior, the results here are the particular practical importance to advertisers.

The next section analyzes the framework or model and its composition as it operates to depict the vicarious learning process.

Examination of the Model

Two statistical techniques will be used in the analysis of the model, pearson correlation and discriminant analysis. The first technique presented is pearson correlation.

TABLE 17
MEAN GROUP COMPARISONS - H₉ FOR
INTENT TO PURCHASE
GROUPS 2 AND 4

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 4		
Will Apply For Card Next Week	1.65	1.78	- .77	.445
Will Apply For Card Next Month	1.78	1.96	-1.04	.302
Might Apply For Card	3.23	3.65	-1.93	.057
Think Will Never Apply For Card	3.52	3.90	-1.91	.060
Certain Will Never Apply For Card	3.87	4.08	- .92	.359

^aOn a 5 point scale, 5 indicates the highest level of intent to purchase, 1 indicates the lowest level of intent to purchase for all variables.

TABLE 18
MEAN GROUP COMPARISONS - H₉ FOR
INTENT TO PURCHASE
GROUPS 5 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 5	Group 6		
Will Apply For Card Next Week	1.73	1.55	.94	.351
Will Apply For Card Next Month	2.02	1.83	.94	.352
Might Apply For Card	3.47	3.36	.44	.664
Think Will Never Apply For Card	3.71	3.98	-1.23	.223
Certain Will Never Apply For Card	4.11	4.38	-1.32	.190

^aOn a 5 point scale, 5 indicates the highest level of intent to purchase, 1 indicates the lowest level of intent to purchase for all variables.

The pearson correlation analysis is performed with a two-tail test of significance. The correlations examine the theoretical operation of the proposed framework or model in terms of predictive validity. All the constructs in the framework are correlated with intent to purchase to examine how well the model predicts future behavioral action. In examining this aspect of the framework, predictive validity is addressed. The results will be discussed for each individual construct.

Table 19 summarizes the results obtained from the pearson correlation analysis. Tables A-24 through A-57 in the appendix provide detailed numerical results.

All of the correlations for attention are negative. (See Tables A-24 through A-26 in the appendix) suggesting the opposite kind of relationship between attention and intent to purchase the framework suggests. It was hoped there would be positive correlation between attention and intent to purchase validating the model, but this is not the case. The results do not suggest a higher level of attention on the part of the audience observing the commercial indicates a propensity towards purchasing an ATM card. These results indicate the need for the advertiser to take a closer look at the importance of attending behavior. Intuitively, attention should be an important factor, however. Therefore, it is possible these results are due to the data gathering

TABLE 19
SUMMARY OF CORRELATION RESULTS

Construct	Correlation Results
Attention	No useful correlations
Comprehension/Learning	Relationship with Imitation
	Relationship with Retention (Not strong)
Retention	Relationship with Comprehension/Learning (Not strong)
Imitation	Relationship With Comprehension/Learning
	Relationship with Purchase Behavior (Slight)
Involvement	Relationship with Purchase Behavior
Situation	Relationship with Purchase Behavior

methods employed or difficulty in measuring the construct as is discussed in Chapter V.

Tables A-27 through A-29 in the appendix illustrate results for comprehension/learning and intent to purchase which are somewhat analogous to the results obtained for attention. Many correlations do not suggest a higher level of understanding is associated with intent to purchase an ATM card on the part of the audience observing the commercial. Theoretically, the higher level of understanding should make potential product use more feasible on the part of the audience and encourage applications for teller cards as a result. However, it is possible understanding of correct product use is not alone sufficient to encourage purchase behavior, which is what these results suggest.

Retention results (see Tables A-30 through A-34 in the appendix) are somewhat analogous to those obtained for attention and comprehension/learning. There are a majority of negative correlations. Most of the correlations are low. These results indicate no support for the model's representation that retention of correct product use encourages the audience to apply for a teller card.

Imitation (see Tables A-35 through A-39) shows a slight relevance to purchase behavior with some low positive correlations. Only two variables with positive correlations are significant at the .05 level.

Therefore, the relevance between imitation and purchase behavior can be termed slight at best. Only with some feeling of surety can an advertiser assume that ability to imitate the model in the commercial will make the audience more likely to apply for a teller card, according these results.

Involvement (Tables A-40 through A-44 in the appendix) results indicate the need for a much more important representation in the model than is currently portrayed. Highly significant results (with the exception of one variable) and positive correlations of a fairly respectable magnitude suggest a fairly strong relationship between involvement (at many levels) and intent to purchase an ATM card. Therefore, involvement with the product (ATM) appears to predict propensity to apply for a teller card on the part of the audience. It appears product involvement should be of interest to advertisers who want to encourage purchase behavior.

Situation (Tables A-45 through A-49 in the appendix) results indicate a relationship with intent to purchase. Most correlations are significant, many highly significant. All correlations are positive. Although some are fairly low, many correlations are fairly high. The overall results suggest the need to consider situation more than just an external factor in the model representation of the operation of vicarious learning.

For advertisers, it appears a variety of use situations are conducive to encouraging behavior.

The overall results suggest some level of predictive validity which also indicates results of interest to advertisers who wish to encourage purchase behavior as has been discussed with the results of each individual construct. Imitation demonstrates the highest level of the main constructs in the framework. However, since the relationship between imitation and intent to purchase can at best be termed slight, a high level of predictive validity is not present here. Both involvement and situation reflect a certain level of predictive validity with a fairly strong relationship to intent to purchase.

The next eight tables (A-50 through A-57 in the appendix) present findings examining relationships that would give some indication of the relationship between constructs in the model that are suspected to be somewhat related due to the nature of the construct. Pearson correlations were used to demonstrate the relationship between imitation and comprehension/learning. The relationship between comprehension/learning and retention is also examined.

There are some significant positive correlations between comprehension/learning (Tables A-50 through A-52 in the appendix) and imitation. Many of

these correlations are fairly high indicating a relationship between the two constructs. This is not an unexpected result since in order to imitate the model in the commercial, the audience must understand how to correctly operate the ATM.

Comprehension/learning and retention (see Tables A-53 through A-57 in the appendix) are related as indicated by some positive significant coefficients. In most cases, they are fairly low, however. Therefore, it would be appropriate to describe the relationship between comprehension/learning and retention as one that's not very strong.

It was suspected comprehension/learning would leave a relationship with both imitation and retention. It is difficult to separate the three processes. A consumer must retain the understanding of the operation of the ATM in order to imitate the model and operate the ATM. This suspicion is confirmed by the correlation results. Therefore, the advertiser should be cognizant of the need for comprehension/learning to obtain retention product use and imitation of the model.

Discriminant analysis is the final technique used to examine the model. The constructs presented should distinguish between users (a person on whom the vicarious learning process has theoretically been successful) and non-users of the ATM card. This is a

basic assumption for the formation of the model. A person who attends to the commercial stimulus comprehends the operation of the ATM, retains this process, is able to imitate the model's presentation on withdrawing cash, and intends to purchase an ATM card should be classified as a user. If the person demonstrates involvement with the ATM (feels it is an important type of service to have) and can imagine many situations in which the teller card would be used, theoretically the person should be a user. Persons who do not possess these characteristics theoretically would be less likely to be users of ATM cards. Discriminant analysis will provide evidence concerning the ability of the constructs to distinguish between users and non-users of the ATM card. The students in the sample were asked whether they intended to use an automatic teller machine in the future, and if so, how often (see questionnaire in appendix). Non-users were defined as those who indicated they did not intend to use a teller card in the future at all. Users were persons indicating some intention to use a teller card in the future irrespective of frequency. These results will demonstrate more completely whether the constructs included in the representation of vicarious learning are appropriate.

Two stepwise discriminant runs were performed using the smallest Wilks' lambda. The results were

verified with the use of the Jackknife procedure. Correctly classified cases as a result of the discriminant runs were 87.17%. Correctly classified cases as a result of the jackknife procedure to verify the results were 84.0%. Both results much higher than chance. Tables 20 through 21 summarize the results.

Discriminant analysis results indicate mixed results for the model and the individual constructs. Comprehension/learning and imitation have no predictor variables present. The construct attention has predictor variables as a result of analysis indicating a higher level of attention for non-users than users according to a comparison of user and non-user group means. Retention has two variables, machine has voice and push buttons, where a higher level of retention is indicated for non-users, according to the means. The other variables measuring retention indicate a higher level of retention for users. Intent to purchase is higher for users on all variables indicated. Involvement is higher for users on all variables indicated. Situation (imagining situations in which respondent would use ATM) is higher for users.

These mixed results suggest support for some of the constructs in terms of distinguishing between user and non-user. Since the results from the T-tests do not indicate vicarious learning is a strong factor in inducing a consumer to become an ATM user, it cannot be

TABLE 20
PREDICTOR VARIABLES ESTABLISHED
AS A RESULT OF DISCRIMINANT
ANALYSIS - PART I

Construct	Variable	Discriminant Function Coefficient Non-User	Discriminant Function Coefficient User
Attention	Watched All Of Commercial	3.0	2.3
	Watched Very Little Of Commercial	4.4	4.0
Comprehension/ Learning	None		
Retention	ID Number Entered	2.3	3.1
	Card Inserted	19.6	20.7
	Machine Has Voice	.4	.1
	Push Buttons	- 2.8	- 4.5
	Machine Returns Card	4.3	5.7
Imitation	None		
Intent to Purchase	Will Apply For Card Next Week	7.4	7.8
	Might Apply For Card	.3	.5
	Think Will Never Apply For Card	2.2	3.7

TABLE 21
PREDICTOR VARIABLES ESTABLISHED
AS A RESULT OF DISCRIMINANT
ANALYSIS - PART II

Construct	Variable	Discriminant Function Coefficient Non-User	Discriminant Function Coefficient User
Involvement	Use of ATM - Somewhat Important	1.0	.7
	Use of ATM - Not Important	.3	1.3
Situation	Use ATM Instead Of Bank	- 2.8	- 3.2
	Use ATM During Banking Hours	3.0	3.5
	Use ATM To Determine Balance	- 1.4	- 2.9
	Use ATM For Emergency Deposits	4.3	4.7
	Can't Imagine Ever Using ATM	1.4	1.8

stated that the vicarious learning effect is really measured here. Since it cannot be stated users were influenced to become that way from the vicarious learning effect, basically this analysis demonstrates the variables that predict use or non-use of a teller card on their own merit; a consumer with a high level of retention with the ATM is possibly more apt to be a user, for instance. The results indicate users have a lower level of attention than non-users; users have a higher level of intent to purchase and involvement. Users also imagine more situations in which to use the ATM. Comprehension/learning and imitation do not predict group membership at all. These results indicate advertisers should encourage a high level of product involvement and instill many use situations in the minds of potential consumers. Consumers with a high level of retention of product use are also good potential teller card users. Therefore, commercials need to be constructed so the audience will remember the correct way to use a product.

Summary

The analysis has examined many aspects of the question of the effectiveness of vicarious learning. Conclusions, limitations, and directions for future research are presented in the next and final chapter.

CHAPTER V

CONCLUSIONS

Introduction

The results of this study contain many implications for advertising in the future. Indications from this study are of special interest concerning the indication of the effectiveness of demonstration (vicarious learning) in commercials.

The results are presented by each individual construct. Conclusions concerning the effectiveness of the use of vicarious learning in advertising will be stated, followed by limitations of the study and directions for future research.

Attention

Attending behavior does not appear to be an important construct in the model representation of vicarious learning from the results obtained in this study. There were no significant differences between groups exposed to the commercial with vicarious learning and without. The relationship between attention and intent to purchase was negative, and as a predictor construct for users and non-users of ATM cards, attention was not a helpful construct. Intuitively, attending

behavior should be related to and a very important aspect of the commercial viewing process. This feeling is outwardly expressed in the literature with a stream of research being conducted in that area. It is possible that attention is a difficult type of cognitive response for a subject to relate, despite the quality of the measurement instrument. This could be especially true for the viewer of a commercial when the action takes place in so short a period of time (in this case, 39 seconds).

Possibly the results obtained are due to the fact the commercial being shown was the only activity going on in the front of the classroom at the time. Since the students were in a classroom setting, there is possibly little feeling that alternative action to watching the commercial would be acceptable. Therefore, all groups would possibly attend to the commercial with approximately equal interest. This line of thought is supported by the high means obtained for most of the groups that are almost the same in most cases. These high means obtained for most of the groups would cloud all types of analyses performed, a plausible explanation for the results obtained. However, the positive aspect of the high means must not be overlooked; the high means could indicate a high level of attending behavior, which is the ultimate goal of any commercial.

Therefore, advertisers should not discount attention as an important aspect of advertising with the use of commercials. The possible explanations for the results achieved are quite plausible.

Comprehension/Learning

The results for the comprehension/learning construct are mixed. There appears to be an increase in understanding of operation of the ATM once a commercial is viewed, but the case for vicarious learning is not strong. The positive results obtained appear to be due to the commercial effect rather than the vicarious learning effect. The means are higher for most variables of the group with vicarious learning (of the groups without a pretest). Although they are not significantly higher at the .05 level, one is higher at the .27 level and another at the .49 level indicating vicarious learning has had some effect. The results obtained from the other group comparisons (the two groups with a pretest) are not as encouraging. All the means but one are lower for the vicarious learning group. However, the means are not far apart in value and do demonstrate a fairly high level of comprehension/learning in most cases.

Evidence indicating a relationship between comprehension/learning and imitation is not surprising,

since comprehension of the operation of the ATM and operation of the ATM (imitation) are related processes. The consumers must have understanding of operation of the machine in order to imitate the model in the commercial. Retention of the process of operation is also part of the learning process, therefore it is not surprising there is some relationship between comprehension/learning and retention, although it is not a strong relationship. Comprehension/learning and intent to purchase are not positively related, which does not indicate understanding of product use encourages purchase behavior. In addition, comprehension/learning is not a good predictor of product use.

The mixed results obtained indicate some support for the increase of understanding product use due to vicarious learning, although this support can be termed slight. The operation of the ATM was demonstrated only once, in a short time span (39 seconds). It is possible these two factors prevented understanding from taking place at as high a level as it could if the commercial were shown several times.

Due to the fact the results are mixed, comprehension/learning of correct product use should be considered by advertisers as a possibly important aspect of the vicarious learning process.

Retention

A high level of retention is indicated for all groups. In many instances, means are higher for those groups exposed to the commercial with vicarious learning. In fact, at the .11 level of significance, several variables are higher for groups with vicarious learning. At the .46 level, even more are significant indicating some support for vicarious learning. In a few cases, on some variables, means are slightly higher for the groups shown the commercial without vicarious learning.

It doesn't appear retention is related to intent to purchase, although several variables measuring retention are predictor variables distinguishing between users and non-users of ATM cards. Retention is related to comprehension/learning, although the results are not strong as stated previously.

The examination of retention results gives more support to the possibility that longer and more repetitive exposure to a commercial with vicarious learning would be effective. The conflicting and somewhat mixed results are possibly due to lack of a strong enough illustration that vicarious learning is a good technique to instill a high level of retention of product use in the consumer. This could possibly be

achieved by exposure to a number of 60 second spots over a period of time.

Once again, these mixed results should not lead to the discounting of the importance of retention in advertising a product that needs demonstration. Intuitively, it is an important aspect of the vicarious learning process as it would be for any learning process.

Imitation

The results for imitation are analogous to the results obtained for comprehension/learning which is not surprising since there are some significant strong correlations between many of the variables measuring each construct, as has been stated. This is a logical relationship since a subject could not reproduce actions they did not learn or comprehend.

The means for imitation are fairly high with slightly higher means in a few instances on variables from groups with vicarious learning. However, the significance levels for the means higher for vicarious learning are not encouraging. A commercial effect, like the one for comprehension/learning appears responsible for the significant difference. The fact the audience watched a commercial is thought to be responsible for results, not vicarious learning. Comprehension/learning and imitation were the only two constructs

in the model with no variables as predictor variables to discriminate between users and non-users.

It does not appear there is a strong case to suggest vicarious learning encourages imitative behavior on the part of the audience. However, due to the positive results that were obtained, a case can be made that increased exposure to vicarious learning could possibly make a difference.

The mixed results for imitation could possibly be an indication imitation is an important part of the vicarious learning process. Advertisers should not discount this construct, since the consumer must perform certain actions to use a product such as the ATM and must imitate some person or form of information to do so.

Involvement

Involvement was examined as a related area to vicarious learning and listed as an external factor along with situation.

The means indicate a fairly low level of involvement both before and after exposure to vicarious learning. The results indicate an increase in involvement after exposure to vicarious learning, although it is not a significant increase at the .05 level. However, at the .22 level, several variables are significantly higher for vicarious learning. There is a strong relationship

between involvement and intent to purchase. Two of the involvement variables are predictors between users and non-users of ATM cards.

Assuming more audience exposure to the commercials would demonstrate stronger results for the vicarious learning effect, involvement appears to warrant a change in representing vicarious learning. Involvement should be portrayed as more important in the actual vicarious learning process, rather than merely listed as an external factor.

Product involvement is an area that it appears advertisers should encourage. Advertisers could also identify segments of people with different levels of involvement already present and promote the product to segments with higher levels of involvement since that segment tends to be users of the teller card.

Situation

Situation is the other external factor, examined to determine the relationship, if any, it has to vicarious learning.

Although the means examined are not indicative situation is affected by vicarious learning, results reflect an important relationship between situation and the possibility of using a teller card. A few of the means are on the high side indicating propensity to use

the ATM in various situations indicated on the questionnaire.

The relationship between situation and intent to purchase is extremely strong. Five out of seven of the variables measuring situation predict group membership between users and non-users of ATM cards. These results strongly suggest situation is important in promoting the use of the ATM. Therefore, it appears advertisers should encourage many use situations since the more situations consumers imagine themselves using the ATM in, the more likely they are to be users.

Summary and Contributions

This particular study generates mixed results regarding the effectiveness of vicarious learning. The usefulness of vicarious learning as an educational tool for correct product use was not clearly demonstrated in a positive manner, but it is believed there are indications that this technique is helpful. Strong results are also not present to illustrate that vicarious learning is a superior method over the strictly informative technique. However, there is some indication that vicarious learning is the superior method once audience exposure level is high enough.

The model representing vicarious learning held up fairly well. The results do indicate involvement

could be important construct in the vicarious learning process. Situation appears very relevant in ATM use. Both could possibly be represented more closely in connection with the main process itself rather than as external factors.

Probably the most important contribution this study makes is to generate future interest in an area which appears to be useful to marketers, specifically advertisers. An extensive review of the literature revealed no other work done on the effectiveness of vicarious learning in advertising. Perhaps this will lead to increased interest in investigating the application of other behavior modification techniques to marketing. Behavior modification is an area which has extensive theoretical development and application. It could have a profound effect on the future development of marketing.

Limitations

Every study conducted has limitations. While these limitations do not invalidate the results, it is important that they be stated so the results can be interpreted with all considerations enumerated.

Internal validity was the primary consideration as explained previously. All precautions were taken to insure internal validity, since this is always a concern

in advertising research. It was necessary to insure no outside variables influenced the results other than vicarious learning. The precautions taken resulted in a lab situation that was probably more realistic than most. Commercials were shown in a classroom setting on a videoplayer with a TV. Generally, commercials would have been seen on a TV, so this added to the realistic nature of the situation. However, whenever an artificial situation is set up, there is some concern over external validity. Due to the lab procedures followed, it is felt both internal validity was preserved and external validity was not severely threatened.

The student sample is one of interest to the banking industry. Automatic teller machines are being installed on college campuses all across the country. Therefore, although there may be concern over the fact a student sample was used, it is an appropriate sample in this case due to the nature of the product.

Directions for Future Research

The next step in the investigation of the use of vicarious learning in advertising is increased exposure over a period of time as indicated by the results. It is indicated by the results obtained in this study that vicarious learning is having some effect. However, due to the short length of the commercial (39

seconds) and the single exposure the audience received, the effect was not illustrated very strongly.

The audience should also be placed in a situation where attending behavior is not felt to be mandatory or supervised. The results will be more realistic and akin to television viewing behavior.

This is a very useful technique to the advertising industry, especially with the constant development of new and very often more complicated products. It is definitely an area that warrants further research.

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APPENDICES

APPENDIX A
TABLES

TABLE A-1
ITEM-TO-TOTAL RESULTS
FOR ATTENTION

Variable	Correlation
Watched All of Commercial	.11
Watched Most of Commercial	-.12
Watched Very Little of Commercial	.19
Watched None of Commercial	.41

TABLE A-2
ITEM-TO-TOTAL RESULTS
FOR COMPREHENSION/LEARNING

Variable	Correlation
Completely Understand	.44
Almost Completely Understand	.55
Somewhat Understand	.14
Barcly Understand	.55
Do Not Understand	.69

TABLE A-3
ITEM-TO-TOTAL RESULTS
FOR RETENTION

Variable	Correlation
ID Number Entered	.42
Card Inserted	.69
Machine Has Voice	.14
Machine Gives Cash	.45
Speak Into ATM	.61
Push Buttons	.71
Machine Returns Card	.59

TABLE A-4
ITEM-TO-TOTAL RESULTS
FOR IMITATION

Variable	Correlation
Could Withdraw Cash - No Difficulty	.45
Could Withdraw Cash - Small Amount of Difficulty	.25
Could Withdraw Cash - Large Amount of Difficulty	.45
Could Withdraw Cash - Extremely Large Amount of Difficulty	.63
Could Not Withdraw Cash	.65

TABLE A-5
ITEM-TO-TOTAL RESULTS
FOR INTENT TO PURCHASE

Variable	Correlation
Will Apply For Card Next Week	.37
Will Apply For Card Next Month	.48
Might Apply For Card	.52
Think Will Never Apply For Card	.58
Certain Will Never Apply For Card	.57

TABLE A-6
ITEM-TO-TOTAL RESULTS
FOR INVOLVEMENT

Variable	Correlation
Use of ATM - Extremely Important	.68
Use of ATM - Very Important	.72
Use of ATM - Somewhat Important	.75
Use of ATM - Almost Not Important	.63
Use of ATM - Not Important	.62

TABLE A-7
ITEM-TO-TOTAL RESULTS
FOR SIUTATION

Variable	Correlation
Use ATM Instead of Bank	.55
Use ATM During Banking Hours	.65
Use ATM For Emergency Situations	.67
Use ATM to Determine Balance	.67
Use ATM to Transfer Money	.60
Use ATM for Emergency Deposits	.66
Can't Imagine Ever Using ATM	.62

TABLE A-8
CLASS OF SAMPLE
BY GROUP

Class	Group 2	Group 4	Group 5	Group 6
Freshman	1	0	0	0
Sophomore	5	3	0	3
Junior	24	29	29	24
Senior	16	17	16	20

TABLE A-9
SEX OF SAMPLE
BY GROUP

Sex	Group 2	Group 4	Group 5	Group 6
Male	24	34	19	29
Female	22	15	26	18

TABLE A-10
INCOME OF SAMPLE
BY GROUP

Income	Group 2	Group 4	Group 5	Group 6
Under \$5,000	31	37	31	29
\$5,001 - \$10,000	10	10	8	12
\$10,001 - \$15,000	1	2	3	2
Over \$15,000	4	0	3	4

TABLE A-11
AGE OF SAMPLE
BY GROUP

Age	Group 2	Group 4	Group 5	Group 6
18 - 19	3	2	0	0
20 - 22	37	37	37	39
23 - 35	5	9	8	8
over 35	1	1	0	0

TABLE A-12
STATE (PERMANENT PLACE OF RESIDENCE)
OF SAMPLE BY GROUP

State	Group 2	Group 4	Group 5	Group 6
Tennessee	37	45	41	45
Other	9	4	4	2

TABLE A-13
GROUP TOTALS

Group	Number of Students
2	46
4	49
5	45
6	47

TABLE A-14
MEAN GROUP COMPARISONS - PRETEST EFFECT
COMPREHENSION/LEARNING
GROUPS 2 AND 5

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 5		
(Levels of Understanding)				
Completely Understand	3.89	3.31	2.19	.031
Almost Completely Understand	3.33	3.44	- .50	.618
Somewhat Understand	3.24	3.33	- .39	.695
Barely Understand	3.85	3.84	.02	.986
Do Not Understand	4.35	4.47	- .70	.483

^aOn a 5 point scale, 5 indicates highest level of understanding, 1 the lowest level of understanding for all variables.

TABLE A-15
MEAN GROUP COMPARISONS - PRETEST EFFECT
COMPREHENSION/LEARNING
GROUPS 4 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 4	Group 6		
(Levels of Understanding)				
Completely Understand	3.98	3.17	3.46	.001
Almost Completely Understand	3.49	3.17	1.39	.167
Somewhat Understand	3.22	3.21	.05	.962
Barely Understand	4.08	4.00	.48	.634
Do Not Understand	4.53	4.34	1.18	.242

^aOn a 5 point scale, 5 indicates highest level of understanding, 1 the lowest level of understanding for all variables.

TABLE A-16
MEAN GROUP COMPARISONS - PRETEST EFFECT
IMITATION
GROUPS 2 AND 5

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 5		
Could Withdraw Cash - No Difficulty	3.74	2.84	3.35	.001
Could Withdraw Cash - Small Amount of Difficulty	3.48	3.27	.91	.363
Could Withdraw Cash - Large Amount of Difficulty	3.93	3.76	.98	.328
Could Withdraw Cash - Extremely Large Amount of Difficulty	4.09	4.20	- .76	.450
Could Not Withdraw Cash	4.50	4.50	.07	.948

^aOn a 5 point scale, 5 indicates highest level of imitation, 1 the lowest level of imitation for all variables.

TABLE A-17
MEAN GROUP COMPARISONS - PRETEST EFFECT
IMITATION
GROUPS 4 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 4	Group 6		
Could Withdraw Cash - No Difficulty	3.71	2.89	3.24	.002
Could Withdraw Cash - Small Amount of Difficulty	3.47	3.30	.74	.463
Could Withdraw Cash - Large Amount of Difficulty	4.02	3.74	1.69	.094
Could Withdraw Cash - Extremely Large Amount of Difficulty	4.29	4.21	.56	.575
Could Not Withdraw Cash	4.57	4.40	1.21	.231

^aOn a 5 point scale, 5 indicates highest level of imitation, 1 the lowest level of imitation for all variables.

TABLE A-18
MEAN GROUP COMPARISONS - PRETEST EFFECT
INTENT TO PURCHASE
GROUPS 2 AND 5

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 5		
Will Apply For Card Next Week	1.65	1.73	- .45	.657
Will Apply For Card Next Month	1.78	2.02	-1.25	.216
Might Apply for Card	3.24	3.47	- .94	.348
Think Will Never Apply For Card	3.52	3.71	- .86	.393
Certain Will Never Apply For Card	3.87	4.11	-1.00	.319

^aOn a 5 point scale, 5 indicates highest level of intent to purchase, 1 the lowest level of intent to purchase for all variables.

TABLE A-19
MEAN GROUP COMPARISONS - PRETEST EFFECT
INTENT TO PURCHASE
GROUPS 4 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 4	Group 6		
Will Apply For Card Next Week	1.78	1.55	1.30	.197
Will Apply For Card Next Month	1.20	1.83	.70	.484
Might Apply for Card	3.65	3.36	1.36	.178
Think Will Never Apply For Card	3.90	3.98	- .41	.679
Certain Will Never Apply For Card	4.08	4.38	-1.54	.128

^aOn a 5 point scale, 5 indicates highest level of intent to purchase, 1 the lowest level of intent to purchase for all variables.

TABLE A-20
MEAN GROUP COMPARISONS - PRETEST EFFECT
INVOLVEMENT
GROUPS 2 AND 5

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 5		
Use of ATM - Extremely Important	2.00	2.04	- .24	.814
Use of ATM - Very Important	2.11	2.04	.35	.727
Use of ATM - Somewhat Important	2.60	2.93	-1.43	.155
Use of ATM - Almost Not Important	2.67	2.93	-1.21	.229
Use of ATM - Not Important	3.13	3.29	- .57	.570

^aOn a 5 point scale, 5 indicates highest level of involvement, 1 the lowest level of involvement for all variables.

TABLE A-21
MEAN GROUP COMPARISONS - PRETEST EFFECT
INVOLVEMENT
GROUPS 4 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 4	Group 6		
Use of ATM - Extremely Important	2.16	2.13	.18	.857
Use of ATM - Very Important	2.20	2.21	- .05	.964
Use of ATM - Somewhat Important	2.78	2.79	- .05	.962
Use of ATM - Almost Not Important	3.04	2.98	.27	.791
Use of ATM - Not Important	3.20	3.36	- .60	.551

^aOn a 5 point scale, 5 indicates highest level of involvement, 1 the lowest level of involvement for all variables.

TABLE A-22
MEAN GROUP COMPARISONS - PRETEST EFFECT
SITUATION
GROUPS 2 AND 5

Variable	Means ^a		T Value	Two-Tail Probability
	Group 2	Group 5		
Use ATM Instead of Bank	2.83	3.29	-1.86	.067
Use ATM During Banking Hours	3.28	3.62	-1.44	.152
Use ATM For Emergency Situations	3.87	4.31	-2.33	.022
Use ATM To Determine Balance	3.61	3.78	- .77	.441
Use ATM To Transfer Money	3.11	3.18	- .27	.785
Use ATM For Emergency Deposits	3.61	3.69	- .33	.741
Can't Imagine Ever Using ATM	3.93	4.18	-1.04	.303

^aOn a 5 point scale, 5 indicates propensity toward using ATM in various situations named. In the last variable, 5 indicates propensity to use ATM in some situation. One is the lowest end of the scale in all cases.

TABLE A-23
MEAN GROUP COMPARISONS - PRETEST EFFECT
SITUATION
GROUPS 4 AND 6

Variable	Means ^a		T Value	Two-Tail Probability
	Group 4	Group 6		
Use ATM Instead of Bank	3.39	3.15	1.02	.310
Use ATM During Banking Hours	3.82	3.53	1.54	.127
Use ATM For Emergency Situations	4.29	4.28	.07	.945
Use ATM To Determine Balance	3.92	3.80	.59	.559
Use ATM To Transfer Money	3.55	3.28	1.18	.240
Use ATM For Emergency Deposits	3.96	3.90	.35	.726
Can't Imagine Ever Using ATM	4.22	4.26	- .17	.865

^aOn a 5 point scale, 5 indicates propensity toward using ATM in various situations named. In the last variable, 5 indicates propensity to use ATM in some situation. One is the lowest end of the scale in all cases.

TABLE A-24

CORRELATION BETWEEN ATTENTION
AND INTENT TO PURCHASE -
FIRST AND SECOND VARIABLES OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Attention)	Coefficient	Significance
Will Apply For Card Next Week	Watched All of Commercial	-.1182	.107
	Watched Most of Commercial	-.0119	.871
	Watched Very Little of Commercial	-.2045	.005
	Watched None of Commercial	-.1668	.023
Will Apply For Card Next Month	Watched All of Commercial	-.1001	.173
	Watched Most of Commercial	-.0569	.439
	Watched Very Little of Commercial	-.2196	.003
	Watched None of Commercial	-.1378	.060

TABLE A-25

CORRELATION BETWEEN ATTENTION
AND INTENT TO PURCHASE -
THIRD AND FOURTH VARIABLES OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Attention)	Coefficient	Significance
Might Apply For Card	Watched All of Commercial	-.1632	.026
	Watched Most of Commercial	-.0828	.260
	Watched Very Little of Commercial	-.1529	.037
	Watched None of Commercial	-.0314	.670
Think Will Never Apply For Card	Watched All of Commercial	-.0285	.699
	Watched Most of Commercial	-.1207	.100
	Watched Very Little of Commercial	-.0739	.315
	Watched None of Commercial	-.0075	.919

TABLE A-26

CORRELATION BETWEEN ATTENTION
AND INTENT TO PURCHASE -
FIFTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Attention)	Coefficient	Significance
Certain Will Never Apply For Card	Watched All of Commercial	-.0381	.605
	Watched Most of Commercial	-.0009	.990
	Watched Very Little of Commercial	-.0844	.251
	Watched None of Commercial	-.0357	.627

TABLE A-27

CORRELATION BETWEEN COMPREHENSION/LEARNING
AND INTENT TO PURCHASE -
FIRST AND SECOND VARIABLES OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Comprehension /Learning)	Coefficient	Significance
Will Apply For Card Next Week	Completely Understand	.0386	.600
	Almost Completely Understand	.0590	.423
	Somewhat Understand	.0276	.708
	Barely Understand	-.1434	.050
	Do Not Understand	-.1243	.090
Will Apply For Card Next Month	Completely Understand	.0489	.507
	Almost Completely Understand	.0517	.482
	Somewhat Understand	.0499	.498
	Barely Understand	-.1066	.146
	Do Not Understand	-.0594	.419

TABLE A-28

CORRELATION BETWEEN COMPREHENSION/LEARNING
AND INTENT TO PURCHASE -
THIRD AND FOURTH VARIABLES OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Comprehension /Learning)	Coefficient	Significance
Might Apply For Card	Completely Understand	-.0316	.668
	Almost Completely Understand	.0042	.954
	Somewhat Understand	.0908	.216
	Barely Understand	-.0420	.568
	Do Not Understand	-.0075	.919
Think Will Never Apply For Card	Completely Understand	.0398	.588
	Almost Completely Understand	-.1008	.170
	Somewhat Understand	-.1725	.018
	Barely Understand	.1363	.063
	Do Not Understand	.1025	.163

TABLE A-29

CORRELATION BETWEEN COMPREHENSION/LEARNING
AND INTENT TO PURCHASE -
FIFTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Comprehension /Learning)	Coefficient	Significance
Certain Will Never Apply For Card	Completely Understand	-.0343	.641
	Almost Completely Understand	-.0698	.343
	Somewhat Understand	-.0403	.584
	Barely Understand	-.1255	.087
	Do Not Understand	.1025	.163

TABLE A-30
CORRELATION BETWEEN RETENTION
AND INTENT TO PURCHASE -
FIRST VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Retention)	Coefficient	Significance
Will Apply For Card Next Week	ID Number Entered	-.1745	.017
	Card Inserted	-.3592	.000
	Machine Has Voice	-.0011	.988
	Machine Gives Cash	-.1365	.062
	Speak Into ATM	-.1821	.013
	Push Buttons	-.2188	.003
	Machine Returns Card	-.1703	.020

TABLE A-31

CORRELATION BETWEEN RETENTION
AND INTENT TO PURCHASE -
SECOND VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Retention)	Coefficient	Significance
Will Apply For Card Next Month	ID Number Entered	-.1694	.020
	Card Inserted	-.2996	.000
	Machine Has Voice	-.0352	.632
	Machine Gives Cash	-.1249	.089
	Speak Into ATM	-.1210	.099
	Push Buttons	-.1873	.010
	Machine Returns Card	-.1012	.168

TABLE A-32

CORRELATION BETWEEN RETENTION
AND INTENT TO PURCHASE -
THIRD VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Retention)	Coefficient	Significance
Might Apply For Card	ID Number Entered	-.0573	.436
	Card Inserted	.0088	.905
	Machine Has Voice	-.0399	.587
	Machine Gives Cash	-.0352	.632
	Speak Into ATM	.0205	.780
	Push Buttons	.0768	.296
	Machine Returns Card	-.0039	.958

TABLE A-33

CORRELATION BETWEEN RETENTION
AND INTENT TO PURCHASE -
FOURTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Retention)	Coefficient	Significance
Think Will Never Apply For Card	ID Number Entered	.0747	.310
	Card Inserted	-.0014	.985
	Machine Has Voice	-.0549	.455
	Machine Gives Cash	.0639	.385
	Speak Into ATM	.0099	.892
	Push Buttons	.0391	.595
	Machine Returns Card	.0618	.401

TABLE A-34

CORRELATION BETWEEN RETENTION
AND INTENT TO PURCHASE -
FIFTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Retention)	Coefficient	Significance
Certain Will Never Apply For Card	ID Number Entered	.0588	.424
	Card Inserted	.0281	.703
	Machine Has Voice	-.0422	.566
	Machine Gives Cash	-.0062	.933
	Speak Into ATM	.0488	.507
	Push Buttons	.0359	.626
	Machine Returns Card	-.0066	.928

TABLE A-35

CORRELATION BETWEEN IMITATION
AND INTENT TO PURCHASE -
FIRST VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Imitation)	Coefficient	Significance
Will Apply For Card Next Week	Could Withdraw Cash - No Difficulty	.0062	.933
	Could Withdraw Cash - Small Amount of Difficulty	.0497	.500
	Could Withdraw Cash - Large Amount of Difficulty	-.0380	.606
	Could Withdraw Cash - Extremely Large Amount of Difficulty	-.0200	.785
	Could Not Withdraw Cash	-.0891	.225

TABLE A-36

CORRELATION BETWEEN IMITATION
AND INTENT TO PURCHASE -
SECOND VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Imitation)	Coefficient	Significance
Will Apply For Card Next Month	Could Withdraw Cash - No Difficulty	.0125	.865
	Could Withdraw Cash - Small Amount of Difficulty	.0383	.603
	Could Withdraw Cash - Large Amount of Difficulty	-.0180	.807
	Could Withdraw Cash - Extremely Large Amount of Difficulty	-.0286	.697
	Could Not Withdraw Cash	-.0291	.692

TABLE A-37

CORRELATION BETWEEN IMITATION
AND INTENT TO PURCHASE -
THIRD VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Imitation)	Coefficient	Significance
Might Apply For Card	Could Withdraw Cash - No Difficulty	-.0913	.214
	Could Withdraw Cash - Small Amount of Difficulty	.0666	.365
	Could Withdraw Cash - Large Amount of Difficulty	.1159	.114
	Could Withdraw Cash - Extremely Large Amount of Difficulty	.1234	.092
	Could Not Withdraw Cash	.0141	.848

TABLE A-38
CORRELATION BETWEEN IMITATION
AND INTENT TO PURCHASE -
FOURTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Imitation)	Coefficient	Significance
Think Will Never Apply For Card	Could Withdraw Cash - No Difficulty	-.0222	.763
	Could Withdraw Cash - Small Amount of Difficulty	.0694	.345
	Could Withdraw Cash - Large Amount of Difficulty	.1435	.050
	Could Withdraw Cash - Extremely Large Amount of Difficulty	.2309	.001
	Could Not Withdraw Cash	-.2016	.006

TABLE A-39

CORRELATION BETWEEN IMITATION
AND INTENT TO PURCHASE -
FIFTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Imitation)	Coefficient	Significance
Certain Will Never Apply For Card	Could Withdraw Cash - No Difficulty	-.1088	.138
	Could Withdraw Cash - Small Amount of Difficulty	.0634	.388
	Could Withdraw Cash - Large Amount of Difficulty	.0896	.223
	Could Withdraw Cash - Extremely Large Amount of Difficulty	.1495	.041
	Could Not Withdraw Cash	.1677	.022

TABLE A-40
CORRELATION BETWEEN INVOLVEMENT
AND INTENT TO PURCHASE -
FIRST VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Involvement)	Coefficient	Significance
Will Apply For Card Next Week	Use of ATM - Extremely Important	.4835	.000
	Use of ATM - Very Important	.4572	.000
	Use of ATM - Somewhat Important	.3084	.000
	Use of ATM - Almost Not Important	.2881	.000
	Use of ATM - Not Important	.2271	.000

TABLE A-41

CORRELATION BETWEEN INVOLVEMENT
AND INTENT TO PURCHASE -
SECOND VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Involvement)	Coefficient	Significance
Will Apply For Card Next Month	Use of ATM - Extremely Important	.5142	.000
	Use of ATM - Very Important	.4948	.000
	Use of ATM - Somewhat Important	.4051	.000
	Use of ATM - Almost Not Important	.3616	.000
	Use of ATM - Not Important	.3129	.000

TABLE A-42

CORRELATION BETWEEN INVOLVEMENT
AND INTENT TO PURCHASE -
THIRD VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Involvement)	Coefficient	Significance
Might Apply For Card	Use of ATM - Extremely Important	.2471	.001
	Use of ATM - Very Important	.2812	.000
	Use of ATM - Somewhat Important	.3869	.000
	Use of ATM - Almost Not Important	.3564	.000
	Use of ATM - Not Important	.3716	.000

TABLE A-43

CORRELATION BETWEEN INVOLVEMENT
AND INTENT TO PURCHASE -
FOURTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Involvement)	Coefficient	Significance
Think Will Never Apply For Card	Use of ATM - Extremely Important	.1861	.01
	Use of ATM - Very Important	.2575	.000
	Use of ATM - Somewhat Important	.3498	.000
	Use of ATM - Almost Not Important	.4225	.000
	Use of ATM - Not Important	.4257	.000

TABLE A-44

CORRELATION BETWEEN INVOLVEMENT
AND INTENT TO PURCHASE -
FIFTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Involvement)	Coefficient	Significance
Certain Will Never Apply For Card	Use of ATM - Extremely Important	.1207	.100
	Use of ATM - Very Important	.1613	.027
	Use of ATM - Somewhat Important	.3364	.000
	Use of ATM - Almost Not Important	.3252	.000
	Use of ATM - Not Important	.3878	.000

TABLE A-45
CORRELATION BETWEEN SITUATION
AND INTENT TO PURCHASE -
FIRST VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Situation)	Coefficient	Significance
Will Apply For Card Next Week	Use ATM Instead of Bank	.1607	.028
	Use ATM During Banking Hours	.1478	.044
	Use ATM For Emergency Situations	.0097	.895
	Use ATM To Determine Balance	.1475	.044
	Use ATM To Transfer Money	.1723	.018
	Use ATM For Emergency Deposits	.0820	.265
	Can't Imagine Ever Using ATM	.1382	.059

TABLE A-46

CORRELATION BETWEEN SITUATION
AND INTENT TO PURCHASE -
SECOND VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Situation)	Coefficient	Significance
Will Apply For Card Next Month	Use ATM Instead of Bank	.1920	.008
	Use ATM During Banking Hours	.1430	.051
	Use ATM For Emergency Situations	.0858	.243
	Use ATM To Determine Balance	.2595	.000
	Use ATM To Transfer Money	.1687	.021
	Use ATM For Emergency Deposits	.1428	.051
	Can't Imagine Ever Using ATM	.1406	.055

TABLE A-47

CORRELATION BETWEEN SITUATION
AND INTENT TO PURCHASE -
THIRD VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Situation)	Coefficient	Significance
Might Apply For Card	Use ATM Instead of Bank	.3380	.000
	Use ATM During Banking Hours	.3902	.000
	Use ATM For Emergency Situations	.4086	.000
	Use ATM To Determine Balance	.3329	.000
	Use ATM To Transfer Money	.2871	.000
	Use ATM For Emergency Deposits	.3797	.000
	Can't Imagine Ever Using ATM	.3878	.000

TABLE A-48

CORRELATION BETWEEN SITUATION
AND INTENT TO PURCHASE -
FOURTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Situation)	Coefficient	Significance
Think Will Never Apply For Card	Use ATM Instead of Bank	.4012	.000
	Use ATM During Banking Hours	.4625	.000
	Use ATM For Emergency Situations	.5177	.000
	Use ATM To Determine Balance	.4894	.000
	Use ATM To Transfer Money	.3837	.000
	Use ATM For Emergency Deposits	.3913	.000
	Can't Imagine Ever Using ATM	.5301	.000

TABLE A-49

CORRELATION BETWEEN SITUATION
AND INTENT TO PURCHASE -
FIFTH VARIABLE OF INTENT TO PURCHASE SCALE

Variable (Intent to Purchase)	Variable (Situation)	Coefficient	Significance
Certain Will Never Apply For Card	Use ATM Instead of Bank	.3669	.000
	Use ATM During Banking Hours	.3844	.000
	Use ATM For Emergency Situations	.5006	.000
	Use ATM To Determine Balance	.4472	.000
	Use ATM To Transfer Money	.3749	.000
	Use ATM For Emergency Deposits	.4349	.000
	Can't Imagine Ever Using ATM	.5322	.000

TABLE A-50

CORRELATION BETWEEN IMITATION
AND COMPREHENSION/LEARNING -
FIRST AND SECOND VARIABLES OF IMITATION SCALE

Variable (Imitation)	Variable (Comprehension /Learning)	Coefficient	Significance
Could Withdraw Cash - No Difficulty	Completely Understand	.7230	.000
	Almost Completely Understand	.2160	.003
	Somewhat Understand	-.2011	.006
	Barely Understand	.3756	.000
	Do Not Understand	.3379	.000
Could Withdraw Cash - Small Amount of Difficulty	Completely Understand	-.0044	.952
	Almost Completely Understand	.3707	.000
	Somewhat Understand	.2409	.001
	Barely Understand	.0205	.780
	Do Not Understand	.0969	.187

TABLE A-51

CORRELATION BETWEEN IMITATION
AND COMPREHENSION/LEARNING -
THIRD AND FOURTH VARIABLES OF IMITATION SCALE

Variable (Imitation)	Variable (Comprehension /Learning)	Coefficient	Significance
Could Withdraw Cash - Large Amount of Difficulty	Completely Understand	.4124	.000
	Almost Completely Understand	.0628	.393
	Somewhat Understand	-.3254	.000
	Barely Understand	.3519	.000
	Do Not Understand	.2232	.002
Could Withdraw Cash - Extremely Large Amount of Difficulty	Completely Understand	.3731	.000
	Almost Completely Understand	.1265	.084
	Somewhat Understand	-.1469	.045
	Barely Understand	.3869	.000
	Do Not Understand	.3565	.000

TABLE A-52

CORRELATION BETWEEN IMITATION
AND COMPREHENSION/LEARNING -
FIFTH VARIABLE OF IMITATION SCALE

Variable (Imitation)	Variable (Comprehension /Learning)	Coefficient	Significance
Could Not Withdraw Cash	Completely Understand	.4374	.000
	Almost Completely Understand	.2448	.001
	Somewhat Understand	-.0506	.492
	Barely Understand	.4218	.000
	Do Not Understand	.5652	.000

TABLE A-53
CORRELATION BETWEEN COMPREHENSION/LEARNING
AND RETENTION -
FIRST VARIABLE OF COMPREHENSION/LEARNING SCALE

Variable (Comprehension /Learning)	Variable (Retention)	Coefficient	Significance
Completely Understand	ID Number Entered	.2515	.001
	Card Inserted	.1739	.017
	Machine Has Voice	.0764	.298
	Machine Gives Cash	.2590	.000
	Speak Into ATM	.1949	.008
	Push Buttons	.1800	.014
	Machine Returns Card	.1902	.009

TABLE A-54

CORRELATION BETWEEN COMPREHENSION/LEARNING
AND RETENTION -
SECOND VARIABLE OF COMPREHENSION/LEARNING SCALE

Variable (Comprehension /Learning)	Variable (Retention)	Coefficient	Significance
Almost Completely Understand	ID Number Entered	.0360	.625
	Card Inserted	-.0220	.765
	Machine Has Voice	-.1110	.130
	Machine Gives Cash	.1054	.151
	Speak Into ATM	.0194	.792
	Push Buttons	.0499	.497
	Machine Returns Card	-.0049	.947

TABLE A-55

CORRELATION BETWEEN COMPREHENSION/LEARNING
AND RETENTION -
THIRD VARIABLE OF COMPREHENSION/LEARNING SCALE

Variable (Comprehension /Learning)	Variable (Retention)	Coefficient	Significance
Somewhat Understand	ID Number Entered	-.0945	.198
	Card Inserted	-.1183	.107
	Machine Has Voice	-.0763	.299
	Machine Gives Cash	-.0456	.536
	Speak Into ATM	-.1579	.031
	Push Buttons	-.0693	.346
	Machine Returns Card	-.1254	.087

TABLE A-56

CORRELATION BETWEEN COMPREHENSION/LEARNING
AND RETENTION -
FOURTH VARIABLE OF COMPREHENSION/LEARNING SCALE

Variable (Comprehension /Learning)	Variable (Retention)	Coefficient	Significance
Barely Understand	ID Number Entered	.2197	.003
	Card Inserted	.1868	.010
	Machine Has Voice	.1097	.135
	Machine Gives Cash	.1804	.014
	Speak Into ATM	.2005	.006
	Push Buttons	.1954	.007
	Machine Returns Card	.1459	.046

TABLE A-57

CORRELATION BETWEEN COMPREHENSION/LEARNING
AND RETENTION -
FIFTH VARIABLE OF COMPREHENSION/LEARNING SCALE

Variable (Comprehension /Learning)	Variable (Retention)	Coefficient	Significance
Do Not Understand	ID Number Entered	.1148	.118
	Card Inserted	.1250	.088
	Machine Has Voice	.1673	.022
	Machine Gives Cash	.1189	.105
	Speak Into ATM	.1128	.124
	Push Buttons	.0963	.190
	Machine Returns Card	.0631	.391

APPENDIX B
PRETEST QUESTIONNAIRE

Product Use

This survey will ask you some questions about product use. Please do not turn the page until told to do so. The coordinator in charge of the survey will tell you when to begin. Answer all of the questions. If you wish to comment on any questions or qualify your answers, please feel free to use the space in the margins. Your comments will be read and taken into account. All responses will be confidential.

Thank you for your help.

Mary Wurst Werner
Graduate Assistant
Department of Marketing and Transportation
The University of Tennessee
Knoxville, Tennessee

An automatic teller machine (ATM) is an electronic device that allows you to perform banking transactions through the use of a machine (such as deposits, withdrawals, etc.) without physically going to the bank. A teller card is used to operate the machine.

Please circle the number of your chosen alternative.

I previously (in the past) have used an automatic teller machine (ATM):

1. NEVER HAVE USED ONE

2. _____ TIMES A MONTH (if you use a teller card once a month or more, please circle this alternative and specify in the blank space how many times a month, on the average, you use a teller card)

3. OTHER (if you use a teller card less than once a month, please specify how often you have used a teller card in the past _____)

First read all 6 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= disagree SD= strongly disagree

	(circle your choice)				
	SA	A	N	D	SD
1. I will apply for a teller card in the next week.					
2. I will apply for a teller card in the next month.					
3. I might apply for a teller card.					
4. I think I will never apply for a teller card.					
5. I am certain I will never apply for a teller card.					
6. I already own a teller card.					

First read all 5 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

	(circle your choice)				
	SA	A	N	D	SD
1. I completely understand how to withdraw cash from an ATM.					
2. I almost completely understand how to withdraw cash from an ATM.					
3. I somewhat understand how to withdraw cash from an ATM.					
4. I barely understand how to withdraw cash from an ATM.					
5. I do not understand how to withdraw cash from an ATM.					

First read all 5 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

	(circle your choice)				
	SA	A	N	D	SD
1. The use of an ATM is extremely important to me.					
2. The use of an ATM is very important to me.					
3. The use of an ATM is somewhat important to me.					
4. The use of an ATM is of almost no importance to me.					
5. The use of an ATM is of no importance to me.					

First read all 5 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

If someone were to ask you at this moment to withdraw cash from an ATM, assuming no one would tell you how and the ATM would not tell you how, your response would be:

	(circle your choice)				
	SA	A	N	D	SD
1. I could withdraw cash from an ATM correctly with no difficulty.					
2. I could withdraw cash from an ATM correctly with a small amount of difficulty.					
3. I could withdraw cash from an ATM correctly with a large amount of difficulty.					
4. I could withdraw cash from an ATM correctly with an extremely large amount of difficulty.					
5. I could <u>NOT</u> withdraw cash from an ATM correctly.					

First read all 7 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

	(circle your choice)				
	SA	A	N	D	SD
1. I can imagine using the ATM regularly instead of going to a bank.					
2. I can imagine using the ATM on occasion during banking hours.					
3. I can imagine using the ATM for emergency situations when I need cash.					
4. I can imagine using the ATM to determine my balance immediately when needed.					
5. I can imagine using the ATM to transfer money from one account to the other.					
6. I can imagine using the ATM for emergency deposits to cover a check.					
7. I can't imagine any particular instance in which I would use the ATM.					

An automatic teller machine (ATM) is an electronic device that allows you to perform banking transactions through the use of a machine (such as deposits, withdrawals, etc.) without physically going to the bank. A teller card is used to operate the machine.

Please circle the number of your chosen alternative.

I intend (in the future) to use an automatic teller machine (ATM):

1. DON'T INTEND TO USE ONE AT ALL IN THE FUTURE
2. _____ TIMES A MONTH (if you intend to use a teller card once a month or more, please circle this alternative and specify in the blank space how many times a month, on the average, you intend to use a teller card in the future)
3. OTHER (if you intend to use a teller card less than once a month in the future, please specify how often you intend to use a teller card in the future _____)

For the following questions, please circle the appropriate number.

Your classification:

1. FRESHMAN
2. SOPHOMORE
3. JUNIOR
4. SENIOR

Sex:

1. MALE
2. FEMALE

Total amount of income in 1984 (estimated):

1. UNDER \$5000
2. \$5001- \$10000
3. \$10000- \$15000
4. OVER \$15000

List your age:

List your hometown (permanent place of residence) in the space provided. Include city and state only.

APPENDIX C
POSTTEST QUESTIONNAIRE

Product Use

This survey will ask you some questions about product use. Please do not turn the page until told to do so. The coordinator in charge of the survey will tell you when to begin. Answer all of the questions. If you wish to comment on any questions or qualify your answers, please feel free to use the space in the margins. Your comments will be read and taken into account. All responses will be confidential.

Thank you for your help.

Mary Wurst Werner
Graduate Assistant
Department of Marketing and Transportation
The University of Tennessee
Knoxville, Tennessee

An automatic teller machine (ATM) is an electronic device that allows you to perform banking transactions through the use of a machine (such as deposits, withdrawals, etc.) without physically going to the bank. A teller card is used to operate the machine.

Please circle the number of your chosen alternative.

I previously (in the past) have used an automatic teller machine (ATM):

1. NEVER HAVE USED ONE

2. _____ TIMES A MONTH (if you use a teller card once a month or more, please circle this alternative and specify in the blank space how many times a month, on the average, you use a teller card)

3. OTHER (if you use a teller card less than once a month, please specify how often you have used a teller card in the past _____)

First read all 6 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= disagree SD= strongly disagree

	(circle your choice)				
	SA	A	N	D	SD
1. I will apply for a teller card in the next week.					
2. I will apply for a teller card in the next month.					
3. I might apply for a teller card.					
4. I think I will never apply for a teller card.					
5. I am certain I will never apply for a teller card.					
6. I already own a teller card.					

First read all 5 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

	(circle your choice)				
	SA	A	N	D	SD
1. I completely understand how to withdraw cash from an ATM.					
2. I almost completely understand how to withdraw cash from an ATM.					
3. I somewhat understand how to withdraw cash from an ATM.					
4. I barely understand how to withdraw cash from an ATM.					
5. I do not understand how to withdraw cash from an ATM.					

First read all 5 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

	(circle your choice)				
	SA	A	N	D	SD
1. The use of an ATM is extremely important to me.					
2. The use of an ATM is very important to me.					
3. The use of an ATM is somewhat important to me.					
4. The use of an ATM is of almost no importance to me.					
5. The use of an ATM is of no importance to me.					

First read all 5 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

If someone were to ask you at this moment to withdraw cash from an ATM, assuming no one would tell you how and the ATM would not tell you how, your response would be:

	(circle your choice)				
	SA	A	N	D	SD
1. I could withdraw cash from an ATM correctly with no difficulty.					
2. I could withdraw cash from an ATM correctly with a small amount of difficulty.					
3. I could withdraw cash from an ATM correctly with a large amount of difficulty.					
4. I could withdraw cash from an ATM correctly with an extremely large amount of difficulty.					
5. I could <u>NOT</u> withdraw cash from an ATM correctly.					

First read all 7 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

	(circle your choice)				
	SA	A	N	D	SD
1. I can imagine using the ATM regularly instead of going to a bank.					
2. I can imagine using the ATM on occasion during banking hours.					
3. I can imagine using the ATM for emergency situations when I need cash.					
4. I can imagine using the ATM to determine my balance immediately when needed.					
5. I can imagine using the ATM to transfer money from one account to the other.					
6. I can imagine using the ATM for emergency deposits to cover a check.					
7. I can't imagine any particular instance in which I would use the ATM.					

First read all 7 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

When using an ATM according
to the film:

	(circle your choice)				
	SA	A	N	D	SD
1. A personal ID number is entered to operate the ATM.					
2. A card is inserted into the machine for operation of the ATM.					
3. The machine has a voice telling you what to do.					
4. The machine will give you cash.					
5. The first step in operating the machine is to speak into a microphone telling it your checking account number.					
6. The machine is operated by pushing buttons once the teller card is inserted.					
7. The machine returns your teller card once you are finished.					

First read all 4 statements once. Then please circle the choice indicating your reaction to each statement.

SA= strongly agree A= agree

N= neither agree nor disagree

D= Disagree SD= strongly disagree

	(circle your choice)				
	SA	A	N	D	SD
1. I watched all of the commercial.					
2. I watched most of the commercial.					
3. I watched very little of the commercial.					
4. I watched none of the commercial.					

An automatic teller machine (ATM) is an electronic device that allows you to perform banking transactions through the use of a machine (such as deposits, withdrawals, etc.) without physically going to the bank. A teller card is used to operate the machine.

Please circle the number of your chosen alternative.

I intend (in the future) to use an automatic teller machine (ATM):

1. DON'T INTEND TO USE ONE AT ALL IN THE FUTURE
2. _____ TIMES A MONTH (if you intend to use a teller card once a month or more, please circle this alternative and specify in the blank space how many times a month, on the average, you intend to use a teller card in the future)
3. OTHER (if you intend to use a teller card less than once a month in the future, please specify how often you intend to use a teller card in the future _____)

For the following questions, please circle the appropriate number.

Your classification:

1. FRESHMAN
2. SOPHOMORE
3. JUNIOR
4. SENIOR

Sex:

1. MALE
2. FEMALE

Total amount of income in 1984 (estimated):

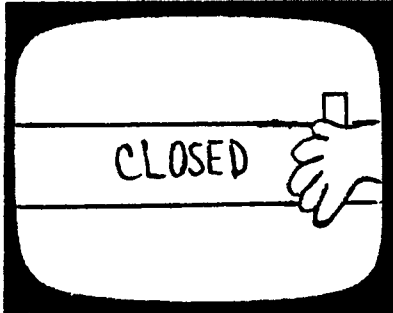
1. UNDER \$5000
2. \$5001- \$10000
3. \$10000- \$15000
4. OVER \$15000

List your age:

List your hometown (permanent place of residence) in the space provided. Include city and state only.

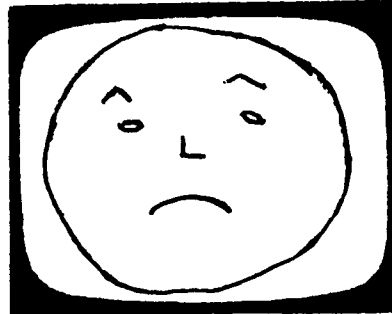
APPENDIX D
STORYBOARDS

STORYBOARD - ATM WITH DEMONSTRATION
PART 1



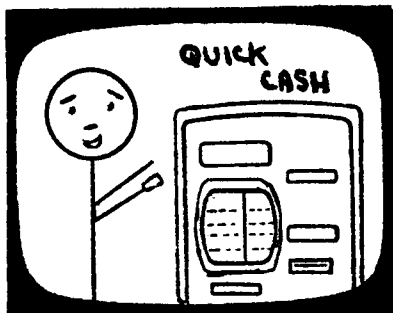
Video: Man's hand
pulling at
locked door.

Audio: Sound of
rattling doors.



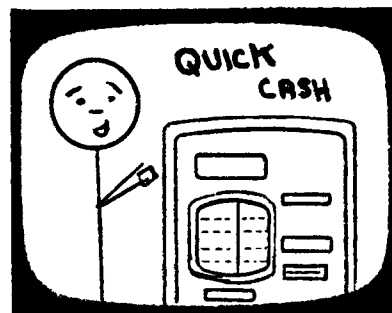
Video: Close-up of man's
face looking
frustrated.

Audio: Where is your bank
when you need it?



Video: Man standing next
to and gesturing
toward ATM.

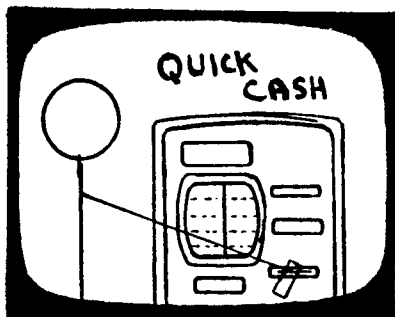
Audio: The "Quick Cash"
machine is the
answer to your
problems.



Video: Man gesturing
toward machine.

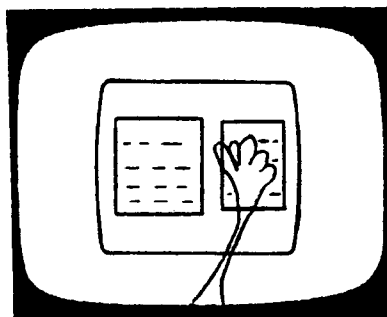
Audio: You need money?

STORYBOARD - ATM WITH DEMONSTRATION
PART 2



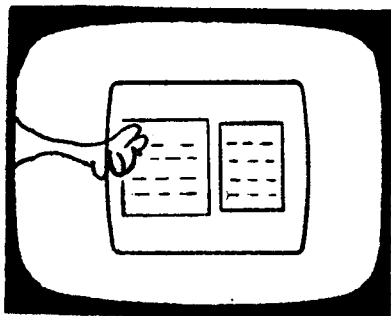
Video: Man putting teller card in machine.

Audio: First you put your teller card in.



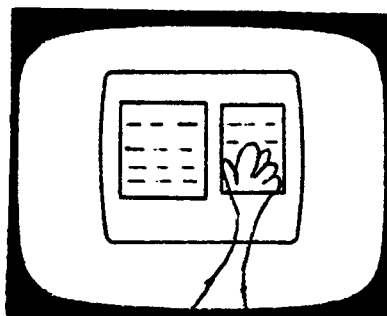
Video: Close-up of man's hand pressing buttons.

Audio: Then enter your personal ID number.



Video: Close-up of man's hand pressing button.

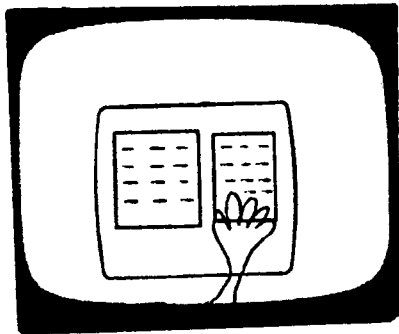
Audio: Press "cash from checking account" button.



Video: Close-up of man's hand pressing buttons.

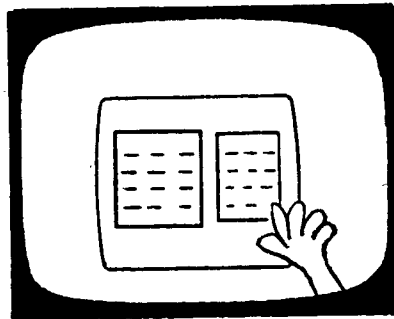
Audio: Press how much money you wish to withdraw.

STORYBOARD - ATM WITH DEMONSTRATION
PART 3



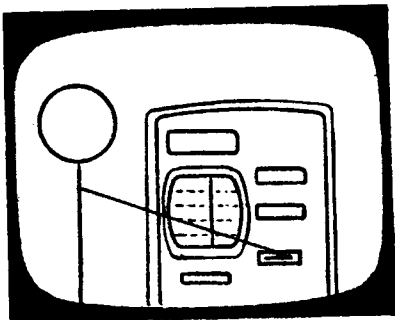
Video: Close-up of man's hand pressing button.

Audio: Press "enter" button.



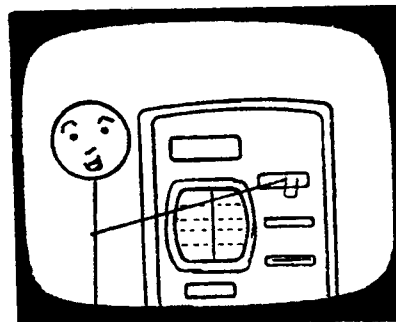
Video: Close-up of man's hand pressing button.

Audio: The machine will ask, "Do you desire another transaction? Press no."



Video: Man taking money and teller card.

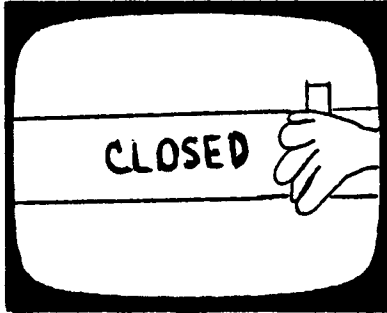
Audio: Take your card and....



Video: Man taking transaction slip.

Audio: ...transaction slip, and have a nice time!

STORYBOARD - ATM WITHOUT DEMONSTRATION
PART 1



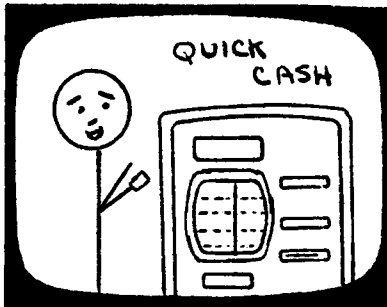
Video: Man's hand
pulling at
locked door.

Audio: Sound of
rattling doors.



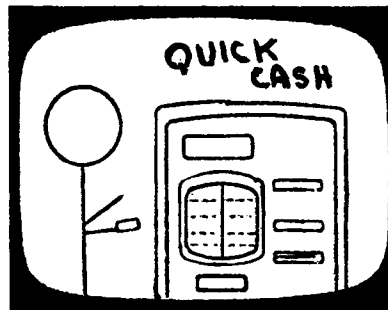
Video: Close-up of man's
face looking
frustrated.

Audio: Where is your bank
when you need it?



Video: Man standing next
to and gesturing
towards ATM.

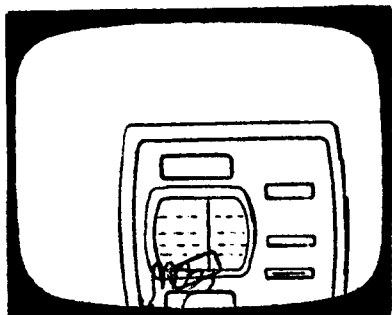
Audio: The "Quick Cash"
machine is the
answer to your
problems.



Video: Man' holding teller
card gesturing
toward machine.

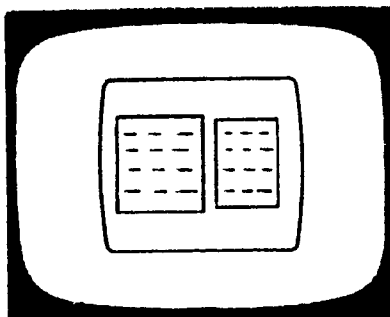
Audio: You need money?

STORYBOARD - ATM WITHOUT DEMONSTRATION
PART 2



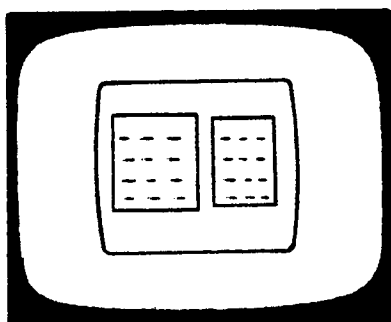
Video: Close-up of man's hand gesturing towards teller machine with teller card.

Audio: First you put your teller card in.



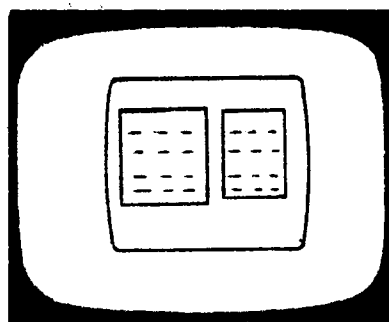
Video: Close-up of buttons on ATM.

Audio: Then enter your personal ID number.



Video: Close-up of buttons on ATM.

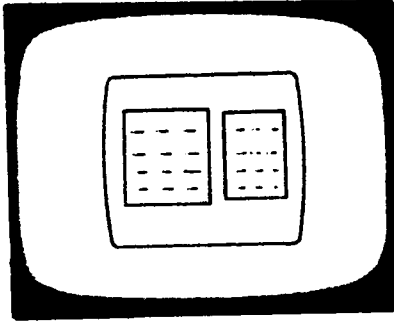
Audio: Press "cash from checking account" button.



Video: Close-up of buttons on ATM.

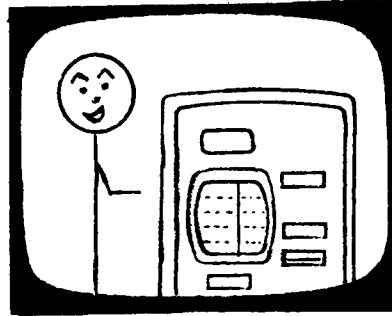
Audio: Press how much money you wish to withdraw. Press "enter" button.

STORYBOARD - ATM WITHOUT DEMONSTRATION
PART 3



Video: Close-up buttons
on ATM.

Audio: The machine will
ask, "Do you desire
another transac-
tion?" Press no.



Video: Man standing next
to ATM talking,
arms bent at elbow.

Audio: Take your card and
transaction slip,
and have a nice
time!

APPENDIX E
MANIPULATION CHECK

Please observe film #1 and then film #2. Describe the difference between film #1 and film #2 below.

VITA

Mary Wurst Werner was born in Miami, Florida. She attended elementary, junior and senior highs in Miami and graduated from Miami Southwest Senior High. She graduated with honors from Emory University in 1976 with a Bachelor of Business Administration degree as a marketing major. Entry into the University of Miami's Master of Business Administration program followed immediately. While working on her master's degree, she was employed at Burger King's Marketing Research Department as a research assistant. She also served an internship at Colle and McVoy Advertising Agency in the summer of 1976, and worked as a research assistant for the Marketing Department at the University of Miami. Following graduation from the University of Miami in 1977, she was employed by Southeast Banking Corporation of Miami, Florida as a Management Research Analyst. In September, 1979, Mary entered the Doctoral Program at the University of Tennessee. While in the Program she worked as both a teaching and research assistant. She was awarded the Ph.D. Degree in Business with a major in Business Administration and concentration in Marketing in December, 1985.

The author is married to Joseph W. Werner, P.E. and has no children.