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Robert D. Fritzen
Western Michigan University

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THE EFFECTS OF FEAR APPEAL COMMUNICATIONS
AND COMMUNICATORS UPON ATTITUDES
ALCOHOL CONSUMPTION

by

Robert D. Fritzen

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of
Degree of Doctor of Education

Western Michigan University
Kalamazoo, Michigan
April 1974
ACKNOWLEDGMENTS

During the course of my doctoral studies and this dissertation I have encountered many individuals on both a personal and professional basis who have greatly aided my growth and development. Though it is obvious that I cannot mention them all here, I greatly appreciate their help and consideration.

More specifically, I would like to extend appreciation to the members of my doctoral committee; Dr. Gilbert Mazer, Dr. William Martinson, Dr. Malcom Robertson, and Dr. James Davenport. In particular, Dr. Mazer's role as both my chairman and friend has been a most rewarding experience for me.

A special note of thanks goes to my good friend Ed Gibeau. His constant help and encouragement during all phases of my dissertation deserves more thanks than can be given here. I also wish to thank Nancy Arnold for typing the final manuscript of this study.

Finally, I only wish more potent words existed to express my deepest feelings of appreciation to my wife Rita. As it took many years of sacrifice and effort on her part to enable us to gain this degree, it will take me a lifetime to repay all I owe her. She shares my doctorate in the truest sense of the word.

Robert D. Fritzen
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CHAPTER I

THE PROBLEM

Changing attitudes and consequently altering behavior has been the focus of interest of behavioral scientists for many years. The process of change is of great practical importance to persons engaged in occupations within such fields as advertising, education, and psychotherapy. There are, however, many unanswered questions related to the process of attitude change, and its subsequent effect upon behavior and retention.

The manner in which attitudes are changed can only be answered to the extent that the maxims regulating the change of attitudes are discovered and put to use in the context of manipulating the individual's reaction to the relevant objects within his attitude structure. A large number of latent variables have been hypothesized to account for observed consistency in attitudes and concomitantly in social behavior. "Attitudes, the end product of the socialization process, significantly influence man's responses to cultural products, to other persons, and to groups of persons (Shaw and Wright, 1967, p. 1)." If the attitude toward any given object or class of objects is known, the possibility then exists to use this attitude, together with situational and other dispositional variables, to predict and interpret the reactions of the person to that unique class of objects.

Two of the variables which have been considered with respect to
attitude change are the level of fear appeal and the person communicating a message. The persuasive cogency of varying levels of threat and communicator character is of particular import, since the persuasive impact of any message can in large measure, be accounted for by the level of fear appeal and the type of communicator. The present research addresses itself to these issues.

The Statement of the Problem

Research concerned with threat appeals has yielded conflicting findings with regard to the relative effectiveness of varying levels of fear appeal communications within the persuasion process. "Unfortunately our knowledge about the relative persuasive effects of strong and weak fear arousing communications is still primitive (Insko, 1967, p. 43)." Knowledge of the effects of fear appeal levels is confounded when diverse types of communicators are considered. The two variables of fear appeal and communicator within the communicational process are of importance both with respect to their own distinctive characteristics, and also with regard to their combined effects.

The present study sought to explore the comparative persuasiveness of alcoholic and non-alcoholic communicators, in addition to high or low fear appeal communications, according to their efficacy to author attitude and behavior change, both separately and within the interaction of the research design.

The primary purpose of this study was to elucidate principles concerning two communicational conditions associated with attitude
and behavior toward the practice of drinking alcoholic beverages. Specifically, the study was designed to ascertain the following:

1) The relative effect of high and low fear appeal communications upon the attitude, behavior, and retention of junior high school students toward the practice of drinking alcoholic beverages.

2) The relative effect of alcoholic and non-alcoholic communicators upon the attitudes, behavior, and retention of junior high school students toward the practice of drinking alcoholic beverages.

3) The interaction effects of high and low communications, with alcoholic and non-alcoholic communicators upon the attitudes, behavior, and retention of junior high school students toward the practice of drinking alcoholic beverages.

Significance of the Study for Education

Persons engaged in the field of Alcohol Education, the area of concern for this particular study, are also searching for the principles of attitude and behavior change. As the consumption of alcoholic beverages rises, and concomitant problems increase, the need to explore and devise techniques and procedures for affecting attitude and behavior toward alcohol becomes a paramount challenge. Alcohol Education, in attempting to meet this challenge, assists "young people in the process of examination of their own feelings and attitudes about the use of alcohol, in view of diverse public attitudes and practices regarding drinking (Curriculum Guide on Alcohol Education for Teachers, 1970, p. 12)." The immediate purpose of the present study was to assist these young people through the development of workable communicational procedures designed to institute the desired influence concerning the use of alcoholic
beverages. The school population was determined as the primary setting for the study because "the school years are, indeed, impressionable ones for our fifty-two million students who compose a fourth of the nation's total population. These are developmental years when habits are formed; habits which can uncover or mask the strains of contemporary life (Curriculum Guide on Alcohol Education for Teachers, 1970, p. 8)."

Definition of Terms

To aid in an understanding of the terms in this thesis the following definitions will apply.

**Attitude:** The word attitude has received a variety of definitions.

"An enduring learned predisposition to behave in a consistent way toward a given class of objects (English and English, 1958, p. 50)."

"An enduring system of positive or negative evaluations, emotional feelings, and pro or con action tendencies with respect to a social object (Krech, Crutchfield, and Ballachey, 1962, p. 177)."

"An individual's social attitude is a syndrome of response consistency with regard to social objects (Campbell, 1950, p. 31)."

"A relatively enduring system of evaluative, affective reactions based upon and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of social objects (Shaw and Wright, 1967, p. 3)."

This thesis shall follow Thurstone's (1946, p. 40) theoretical definition of an attitude as:

"The degree of positive or negative affect associated with some psychological object."
The operational definition of attitude was the median score on the Bues (1934) Attitude Scale Toward Any Practice. This scale asked the subject to check the equal-appearing intervals with which he agrees. All items consisted of statements concerning the practice of drinking alcoholic beverages.

Alcoholic: For the purpose of this study an alcoholic is operationally defined as the communicator who declared the statement "I am an alcoholic." This statement was presented as part of a communication concerning the effects of drinking alcoholic beverages.

Anxiety: Many explanations and definitions have been given for the term anxiety.

The following is an integrated summary of viewpoints concerning the principal dynamics of anxiety (Beeman, 1968, p. 28).

"Anxiety is manifested in physiological, phenomenological, and behavioral levels. In a given individual discrepancies among expressions of anxiety or the different levels may be attributed, in part to the person's defensive operations."

"Anxiety is elicited by psychological stress. Anxiety can result from a variety of stressful conditions including the threatened deprivation of an anticipated satisfaction, the interruption of an ongoing behavioral sequence, uncertainty concerning the outcome of external (environmental) events, or the potential implementation of socially unacceptable impulses."

"Anxiety reactions to stress usually occur in conjunction with other reactions to stress, including various emotional responses, defense mechanisms and coping behaviors."

"The consequences of anxiety are most likely to be disruptive, to interfere with behavioral processes, and to have an effect on learning efficiency."

Within this thesis a distinction was made between anxiety as a
state, and anxiety as a trait (McReynolds, 1968; Zuckerman and Lubin, 1965). The present study is concerned with state anxiety. State anxiety is a transient response to a known set of conditions. The conditions that instigate the anxiety reaction were controlled and used as independent variables within the research design.

Operationally defined, anxiety consisted of the scores on the Paired Words Anxiety Scale. The subjects were directed to check one of the two paired words which best describes their feelings at that particular moment.

**Behavior Change:** For the purpose of this study behavior change referred to the self-reports of subjects, measured by Likert type scales, concerning their incidence of alcohol consumption during a one week period.

**Fear Appeal:** This term refers to a communication which threatens the receiver with unfortunate consequences unless he follows the advice of the communicator (Secord and Bachman, 1964).

Fear appeal was operationally defined as the number of references within the communication with regards to pain, sickness, disease, and death as a function of drinking alcoholic beverages. Reference was also made to "this could happen to you" in relation to the serious consequences of alcohol consumption.

**Non-Alcoholic:** For the purpose of this study a non-alcoholic was operationally defined as the communicator who gave the statement "I am not an alcoholic." This statement was presented as part of a communication concerning the effects of drinking alcoholic beverages.

**Retention:** In the context of this study retention was
operationally defined as the number of statements concerning the practice of drinking alcoholic beverages correctly identified as being part of a communication program presented to each subject.

General Hypotheses

This thesis explored the persuasive impact of varying levels of fear appeal and communicator types. The general hypotheses investigated were as follows:

$H_1$: There is a difference, in the extent of reported state anxiety, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

$H_2$: There is a difference, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

$H_3$: There is a difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

$H_4$: There is a difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

$H_5$: There is a difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

$H_6$: There is a difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a communication from an alcoholic, and subjects who receive a communication
from a non-alcoholic.

\( H_7: \) There is a difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

\( H_8: \) There is a difference in the extent of information retention, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

\( H_9: \) There is a difference in the extent of information retention, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

\( H_{10}: \) There is a difference in the extent of information retention, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

\( H_{11}: \) There is a difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

\( H_{12}: \) There is a difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

\( H_{13}: \) There is a difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

\( H_{14}: \) There is a difference in the extent of behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

\( H_{15}: \) There is a difference in the extent of behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive a
communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

$H_{16}$: There is a difference in the extent of behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

Organization of Content

Chapter two of this dissertation presents a review of research pertinent to this study, namely research concerned with fear appeal, communicators, and the interaction of these two independent variables.

Chapter three consists of a discussion of the research design, sampling, and procedural methods used in the data collection and analysis.

The results of the experimental treatment are presented in the fourth chapter. The topics discussed include the effects of high and low fear appeal communications, the effectiveness of alcoholic and non-alcoholic communicators, and the interaction of these two independent variables. Results are discussed with reference to the dependent variables of anxiety, attitude, behavior, and retention of information.

A bibliography, copies of the instruments and communications used, and other appropriate supplements are found in succeeding pages.
CHAPTER II

REVIEW OF THE LITERATURE

A survey of selected, related literature revealed a complete absence of any study concerned with the particular combination of variables pertinent to the present study. The literature, however, contains a number of studies relevant to separate aspects of this thesis. Studies concerned with fear appeal communication, and communicators, give evidence of many different findings in regard to these communicational variables effectiveness in various situations. In an attempt to present an orderly picture of the various aspects of this problem, Chapter II is organized in the following manner: 1) Fear appeal communication with sections concerning studies supporting no or mixed relationship between fear level and persuasion; studies supporting low fear appeal; studies supporting high fear appeal, 2) Communicator influence, 3) Communicator and fear appeal interaction.

Fear Appeal Communication

In considering persuasion through verbal communication the type of communication itself is of great importance. When beliefs and attitudes are modified, the affirmation is generally made that the motivational factors present play a determinant part in the subsequent learning processes. A reasonable assumption would then follow that if effective communications are presented to an individual
or group of individuals, the desired outcome will emanate as a consequence of their influence.

Symbols in communications may be employed in a variety of socially important motives. These motives may include need for achievement, group conformity, power seeking, and more emotionally established drives derived from feelings of aggression, guilt, anxiety, and sympathy. Endeavors to study the content of various communications have attempted to discern what renders some of them effective and other ineffective. One such procedure, called fear appeal, concerns the effect of a particular motive-incentive variable in communications of a persuasive nature. Fear appeal depicts potential dangers to which the audience may be exposed. Primarily, fear appeal is put into action by either associating an undesirable practice with a negative resultant, or to affiliate a desirable practice with the evasion of unwanted consequences. Fear appeals have frequently been used to influence attitudes and behavior. In essence, fear appeal is the extent to which the individual is threatened with unfortunate consequences unless he follows the advice of the communicator (Secord and Bachman, 1964).

The threat-appeal literature as reviewed by many authors (Higbee, 1969; Janis, 1967, 1968a; Janis and Leventhal, 1968; Leventhal, 1965, 1967; McGuire, 1966, 1968; and Miller, 1963) reveals vast inconsistencies within the research findings concerning the optimal fear level most remunerative in promoting attitude and behavior change through persuasive communications.
Studies supporting no or mixed relationship between fear level and persuasion

Some research findings indicate that there may be no relationship between fear appeal level and persuasion (Frandsen, 1963; Willman, 1968; Moore, 1965; Payne, 1963). Questions have been raised, however, concerning these studies, in regard to their failure to arouse differential fear levels in the subjects (Higbee, 1968). Other studies produce mixed results in regard to fear appeal and persuasion. For example, high fear has been found to affect attitude change without affecting behavior change.

Leventhal, Singer, and Jones (1965) investigated the effect of fear and specification of recommendations upon the intention and the actual obtaining of tetanus inoculations. The results indicated that strong fear was more effective than low fear in producing reported determination to obtain inoculations, and perceived importance of the inoculations. With respect to actually obtaining the inoculations, however, the level of fear had no significant effect.

In a study with somewhat similar results Leventhal, Watts, and Pagano (1967) presented fear arousing communications about the dangers of smoking. Manipulation of three factors was included within the design; intensity of fear stimulus (moderate and high), receipt of instructions on how to stop smoking (given or not given), and smoking during the communication (subjects were given instructions to, or not to, engage in smoking behaviors during the communication). Results indicated that those individuals who had
received the high fear appeal communication had strengthened their desire to stop smoking. The high fear level did not, however, have any effect upon actual smoking behavior. Similar results with respect to differences in attitude and behavior change were obtained by Radelfinger (1963) with preventive health behavior.

In still another example of a study yielding mixed results Leventhal and Watts (1966) conducted an experiment within which one of the variables investigated was the threatening character of the message. Three levels of fear appeal were given in a communication concerning lung cancer and smoking. Findings disclosed that high fear appeal produced less compliance with the recommendations to obtain an X-ray. High fear appeal did, however, produce the greatest amount of actual decrease in smoking behavior. High fear increased the desired behavior with regard to smoking, yet decreased the behavior concerning receiving the X-ray.

In summary, some research has indicated no relationship, or mixed findings between fear level and persuasion. Those studies, though in a definite minority in reference to the total population of findings, must receive consideration.

Studies supporting low fear appeal

Many studies have assumed a relationship between acceptance of recommendations and intensity of fear appeal. The use of fear appeal presumes that the communication will foster emotional affect or tension. A contrary viewpoint is that "strong appeals to fear, by arousing too much tension in the audience, are less effective in
persuasion than minimum appeals (Berelson and Steiner, 1964, p. 552)."

The conclusion that low threat is the more potent persuasive communicational approach was initially based on a study by Janis and Feshbach (1953). In this study high school students were presented with tape recorded and slide illustrated lectures on the cause and prevention of tooth decay. In order to examine the effects of three different intensities of fear appeal each communicational presentation contained essentially the same factual information. However, each differed in the amount of fear arousing material incorporated within the message. The three presentations, which were all approximately fifteen minutes in length, may be briefly characterized as follows:

1) The strong appeal. Both recorded and illustrated communicational media stresses decay, pain, and disease. Vivid portrayal of tooth decay and mouth infections were especially pronounced.

2) The moderate appeal. Fewer references, whose conveyances were presented in less dramatic form, were made to resultants of poor oral hygiene. Photographs used as examples, were of less serious cases.

3) The minimum appeal. Even fewer references were made to the consequences of poor oral hygiene. Photographs of healthy mouths or X-rays were employed as examples.

The nature of the strong fear appeal can be better understood through the following excerpt taken from the message:

"If you ever develop an infection of this kind from improper care of your teeth it will be an extremely serious matter because these infections are really dangerous. They can spread to your eyes, or your heart, or your joints and cause secondary infections which may lead to diseases such as arthritic paralysis, kidney damage, or total blindness (Janis
and Feshbach, 1953, p. 79)."

To evaluate the relative ability of the levels of communications to induce anxiety, a questionnaire was presented to the subjects immediately following the presentation. The hypothesized differential levels of anxiety had actually been produced. Before and after questionnaires revealed that the strong fear appeal produced the least reported change in toothbrushing practice, and the weak fear appeal the most. Results indicated that within the minimum-appeal group 50 percent of the subjects increased conformity to the accepted practices, 14 percent decreased conformity, and 36 percent of the subjects indicated no change in behavior. The minimum appeal brought about a net increase in conformity to accepted practices on the part of 36 percent of the subjects included within the study. This compares with no change in a control group not exposed to any communication, and a net change of only 8 percent in the strong appeal group.

The results were interpreted by Janis and Feshbach as indicating that strong fear appeal prevents subjects from recalling the contents of communications concerning the actions recommended. In this particular case the individual would not recall the recommendations concerning tooth brushing. Hovland, Janis, and Kelley (1953) later stated that fear arousal communications lead to the development of learned fear or avoidance drive. If the fear is reduced by the appropriate reassurances the resulting reinforcement will lead to opinion or attitude change. If the reassurances do not successfully reduce the learned fear drive there is no reinforcement.
and necessarily no opinion or attitude change.

In reference to certain circumstances other types of defensive reactions may ensue which eventually may produce effects of undesirable consequence for the communicator. When the individual is confronted by verbal communications which deal with fear arousing topics emotional interference may prevent the person from being influenced by the message given. Hanfmann (1950), expresses the belief that as the communication percpitates feelings of anxiety the audience will fail to pay attention to what is being said. Through inattentativeness the individual will be able to defend against thoughts that would evoke incipient anxiety. Intensification of anxiety will promote defensive reactions against the anxiety inducing communications. These defenses most commonly will take the form of high level attention disturbances such as inability to concentrate and distractability.

Evidence in support of the defensive resistance hypothesis was obtained in a study conducted by Janis and Terwilliger (1962). The weak fear appeal communication consisted of a series of fifteen paragraphs stated by medical authorities. These statements indicated that heavy smoking causes a serious type of cancer that can be avoided by smoking less. The identical fifteen paragraphs were also used within the strong fear appeal communication. Interspersed among the original paragraphs were seven additional paragraphs which pointed strongly to the seriousness of lung cancer. The subjects, student and adult volunteers, most of whom were smokers, read either the weak or strong fear appeal one paragraph at

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a time. After hearing a paragraph each subject was instructed to verbalize his associations. In addition, subjects were instructed before and after hearing the communication, to verbalize their ideas while they thought of themselves smoking a cigarette. Content analysis of the verbalizations indicated the strong appeal was less influential than the weak appeal in changing attitudes toward smoking. A separate analysis found, however, that the strong fear appeal communication did perform its function of raising subjects level of affective disturbance. It was additionally discovered that the strong appeal group did make rejecting statements and manifested less attitude change. The investigators concluded that these findings support the evidence that strong threat communications evoke defensive resistance to arguments, conclusions, and recommendations contained in the communication.

Additional support for the Janis and Terwilliger (1962) hypothesis comes from diverse areas of the behavioral sciences. Nunnally and Bobren (1959) demonstrated that respondents were less willing to attend to mental health communications which aroused high anxiety and were presented in a personalized manner. This concept was also explored by Barnard (1966) in a study using six hundred fifth grade students. The results indicated that high anxious children related concepts more negatively, and were less controlled than low anxious children. Similar findings in regard to resistance was found by Youtz, Robbins, and Havens (1962). Results indicated that subjects reacting with resentment to a persuasive communication showed less delayed opinion change than
subjects not reacting with resentment.

As can be seen within these studies, anxiety arousing communications may not only produce inattentativeness, but also negative feelings toward the topic discussed. Feelings of indignation appear to hold great weight with regard to the possible effectiveness of the communication.

Negative feelings may also produce an aggressive reaction by the communicatees toward the communicator. In an unpublished study by Janis (Hovland, Janis, and Kelley, 1953) two printed presentations concerning the dangers of excessive cigarette smoking were presented to forty adults. Though the identical recommendations were presented in each version, the stronger of the fear arousing appeals elaborated in detail the unpleasant aspects of the threat material. Upon the completion of the messages it was found that the high fear appeal subjects expressed many spontaneous negative comments concerning both the intent and sincerity of the communicator. In accordance with these findings it then appears that should the communicator be seen as the principal cause of the painful feelings produced by the anxiety laden communication, aggression may take the form of reflecting his statements.

If the communication does succeed in eliciting inordinate apprehensiveness and the communicator is unable to reduce its effects by use of the reassurances within the communication, or his own self-delivered reassurance, the residual emotional tension may motivate defensive avoidances. Norris (1967) attempted to increase the possibility of assimilation and attitude change by varying the
scale against which the advocated position was judged. Results indicated that individuals who did not already have internal reference scales against which to judge or view incoming information, were in a particularly defenseless position. Apparently being momentarily unable to stop the disturbing affective state may give rise to strong incitement to elude any reference to its contents again. Ultimately this may result in the individuals discontinuing interest in the topic, minimizing the consequence, or failing to retain what was being discussed in the fear arousing message (Hanfmann, 1950).

Emotional factors have been researched as not only providing strong stimulus to avoid referential material, but also as nonessential as an incentive necessary to produce attitude change. In relation to this unnecessary incentive hypothesis Leventhal and Niles (1965) investigated the effects of two variables; 1) duration of exposure to fear-arousing communication, and 2) time interval between exposure to the communication and measurement upon emotional arousal and attitude change. Communication procedures consisted of technicolor sound movies depicting the consequences of serious automotive practices. Affective arousal and propensity to engage in safe driving practices were measured after varying lengths of exposure time to the films. Using a total sample of 201 college students the results indicated increased concern and desire to take preventative action were related to the length of exposure. There was, however, no increases in reported fear with increased exposure.

Additional support for this lack of need for emotional factors
within the process of attitude change comes from Leventhal and Trembley's (1968) study concerning negative emotions and persuasion. A film concerning death and destruction in automotive accidents was used to elicit reports of depression and disgust. The reports strongly indicated a defensive reaction. There was little evidence emotional factors had any influence upon the attitude reaction.

Hovland, Janis, and Kelley (1953, p. 163) while summarizing the effects of high fear appeal also point to the exigency for the low or minimum appeal in communications designed to promote attitude or behavior change.

1) "The use of strong fear appeal, as against a milder one increases the probability that the audience will be left in a state of emotional tension which is not fully relieved when the reassuring recommendations contained in the communications are given."

2) "When fear is strongly aroused but not fully relieved by the reassurances contained in a persuasive communication the audience will become motivated to ignore, or to minimize the importance of the threat."

Studies supporting high fear appeal

Though the prior studies did not support the effectiveness of high fear appeal communications in the influencing of attitudes and behavior, this view by no means received unconditional support. An open question remains as to whether such sources of emotional interference play any significant role in determining the net effectiveness of fear appeal material. A number of studies have been conducted within a multitude of settings which suggest a positive relationship between fear and persuasion. Leventhal (1967) states in
a recent review of studies in this area that he found near unanimity of findings; the higher the fear level the greater the acceptance of the recommendation. In a series of studies, testing the effectiveness of high fear appeal, Leventhal, with various collaborators, found what appears to be definite evidence for his hypothesized support of high threat.

Leventhal and Niles (1964) presented audiences attending the New York City Health Exposition, materials which aroused three different levels of fear of cancer. The findings support the hypothesis that fear facilitates, rather than interferes with, the acceptance of recommendations.

In another inquiry Leventhal, Singer, and Jones (1965) investigated the effect of fear upon the intentions to obtain, and the actual obtaining of, tetanus inoculations. The results indicated that strong fear was more effective than low fear in producing intention to obtain inoculations. These findings are also supported by Leventhal, Jones, and Trembly (1966) in regard to tetanus shots. High fear communication produced more favorable attitudes toward the treatment than did low fear appeal. Results indicate, however, that within both of these studies the behavior variable of actually obtaining inoculation was not influenced by the fear appeal level.

During a state fair, visitors were exposed to a fear message about dental hygiene by Leventhal and Singer (1966). Recommendations were also given concerning steps to be taken to insure avoidance of such situations. Findings once again display the superiority of the high fear approach. The higher the level of fear the higher the level
of recommendatin accepted.

In the light of these and other findings Leventhal, Singer, and Jones proposed the following hypothesis strongly supporting the persuasive influence of high fear appeal. "Fear functions as a drive, which promotes the acceptance of recommended actions, and regardless of the absolute level of fear arousal used in any study, the communication which arouses more fear will be more persuasive (Leventhal, Singer, and Jones, 1965, p. 20)."

This statement concludes, with little reservation, that the stronger fear appeal is the superior persuasive method. In direct relation to this conclusion Haefner (1956) performed an exact replication of the classic Janis and Feshbach (1953) study which has remained as the cornerstone of the low fear movement. Within the Haefner study it was found, in opposition to its original, that high fear was more effective than a milder approach.

Support for this conclusion has come from such diverse topics as; proper viewing of the sun during an eclipse (Kraus, El-Assal, and DeFleur, 1966), use of stairway handrails for safety (Piccolino, 1966), and need for fallout shelters (Newgill and Miller, 1965, Powell, 1965).

Not only have numerous studies found that a persuasive communication containing fear-arousing appeals can be effective, but there also is evidence that even arousal of fear which is irrelevant to the communication can facilitate persuasiveness (Lundy, Simonson, and Landas, 1967; McNulty and Walter, 1962; Simonson and Lund, 1966). The preponderance of studies which support the decided superiority of
fear appeal at high levels, however, emphasize the following explanations of its potency.

The first of these causal factors states that a frightening appeal is more exciting and will cause subjects to be more attentive to threat cues (Berkowitz and Cottingham, 1960). This hypothesis would be especially significant in reference to topics with which the audience has little concern. To test the hypothesis, Berkowitz and Cottingham (1960) obtained before and after measures of attitudes toward the use of seat belts from one control and two experimental groups. One experimental group was then presented with a strong fear arousing communication advocating the use of seat belts. The other group was presented with a weak fear arousing communication. A post questionnaire indicated that significantly more subjects regarded the weak communication as uninteresting. In regard to attitude change results confirmed that the weak fear communication did not produce significantly more change than occurred in the control group.

In support of the increased attention postulate, Levonian (1965) measured the effectiveness of traffic films which elicited varying levels of fear arousal. Once again findings ran counter to the belief that communication effectiveness depends on low levels of anxiety. Interest brought about by the higher levels of fear appeal increases the possibility that threat cues may have greater effect upon the viewing audience. As these cues are more firmly a part of the perceptual field of the viewer, the communication will have a greater chance of initiating attitude and behavior change (Janis and Leventhal, 1968).
A second salient factor underlying the effectiveness of high fear appeal has been considered. At a high level of fear arousal it is difficult for the average person to remain unaffected by the warning communication. The individual who receives the high fear appeal will find it very difficult to dismiss by means of blanket reasoning all information about the threat as inconsequential (Janis and Leventhal, 1968). Research evidence which lends considerable credibility to this hypothesis has come from several studies.

Wuebben (1966) conducted an experiment to test the Janis and Feshbach (1953) hypothesis that individuals exposed to a high threat become highly fearful, and as a consequence, minimize the importance of the threat and avoid subsequent internal and external cues which were presented at the time the threatening message was delivered. The study consisted of two levels of undesirable information, and three levels of probability information about the disease varicose veins. In all conditions certain exercises were recommended as coping behaviors which would efficiently prevent the occurrence of such a disease. Using 113 beginning sociology students experimental findings showed that the higher the reported probability, the more subjects became interested in learning how to prevent varicose veins.

Further support was obtained with studies concerning two different populations. In a study by Ostfeld and Katz (1969) the effects of mild and harsh threats of punishment on the attitudes of preschool children were studied. Subjects were prohibited from playing with a favorite toy by verbal threats. Assessment was then recorded in regard to any changes in the rated attractiveness of the
taboo toy. Ratings were judged in relation to direct verbal ratings and indirect color references. Lower socioeconomic class children used within the study exhibited more verbal devaluation under harsh rather than mild threats. This study indicates that with lower socioeconomic preschool children, high fear appeal limited their ability to dismiss the verbal threats.

In another relevant study Kirscht and Haefner (1969) examined affective, cognitive, and intentional reactions to a series of fear-arousing health messages. Subjects consisted of 166 adults who were exposed to three different health films over a three day period. As affective arousal increased with exposure to additional films, so did beliefs in the efficacy of actions to reduce the threat and intentions to take preventative action. The increased fear produced a need to accept the message and recommendation.

A third factor of importance in consideration of the effectiveness of high fear appeal has been advanced by Insko, Arkoff, and Insko (1965). They qualify the Janis and Feshbach (1953) interpretations of the differential persuasiveness by hypothesizing that strong fear will be more persuasive when directed at the preclusion of possible future activity (avoidance). With regard to the present study the avoidance hypothesis would indicate that students who were potential or light drinkers would be influenced to a greater extent by a strong fear appeal.

Testing this hypothesis with non-smoking seventh grade students Insko, Arkoff, and Insko (1965) presented communications pointing to
the detrimental effects of smoking. The two dependent variables consisted of; opinion about future smoking behavior and opinion about the effects of smoking upon health. The first of these dependent variables was measured by summing the responses to a number of questions such as "Will you ever try smoking cigarettes?" and "Will you ever become a regular smoker?" The responses to a number of questions asking "Do you believe that smoking causes lung cancer?" and "Do you believe that smokers die earlier than non-smokers?" were asked to measure the second dependent variable. Before and after change scores disclosed significantly more suggested change in opinion about future smoking behavior from the effect of high fear appeal. In addition the difference between the strong and weak fear arousing communications was significantly greater for opinion about future smoking behavior than for opinion about the effect of smoking upon health. Nondefensive fear reduction was then interpreted as acting upon the subjects so as to produce change differences between the communications for the former but not the latter opinion.

In a similar study measuring the differential effectiveness of varying levels of threat appeal upon avoidance topics, Rosenblatt's (1965) findings supported prior research finding that avoidance recommendations were generated by strong appeals. The research project centered upon an attempt to convince people they should not have a tuberculosis chest X-ray examination. College students, used as subjects, read communications concerning tuberculosis X-rays under the pretense of evaluating the communications readability, interest
value, and other characteristics. The two dependent variables measured within the study were; amount of opinion change advocated, and level of the fear present in the message. Using an after only assessment, strong fear appeal did produce more change toward the avoidance reaction than did the weak appeal.

The effectiveness of high fear appeal with avoidance topics is also well established by several other studies. Dabbs and Leventhal (1966) conducted an experiment concerning tetanus and perceived effectiveness and painfulness of inoculations. The fear manipulation influenced both intentions and behavior, with the high appeal producing greater compliance with the recommendations. In another study, Kornweig (1968) found both attitude and behavior changes toward tetanus inoculations, strongly elicited by high rather than low appeal. Chu (1966), using 1204 school children as subjects, presented talks concerning the danger of roundworms. Effects of the appeals were measured by the number of children wanting to take a drug said to be a preventive measure for round worms. The magnitude of the fear appeal was positively related to the effectiveness of the communications.

Communicator Influence

The communicator has long been recognized as a very important aspect of the influence process. Over 2,000 years ago, Aristotle wrote that "Persuasion is achieved by the speaker's personal character when the speech is so spoken as to make us think him credible. We believe good men more fully and more readily than others (Mills, 1969, p. 24)." The extent to which a communication is
effective will depend to a large degree upon who is the deliverer of the message. Experiments within the fields of psychology, speech, sociology, and education have attempted to study the communicator influence with many and varied topics. The influence of the communicator, has often taken a secondary role to other variables.

"In a few instances the development of a measure of credibility has been the main goal of a research project, but more often the measurement of prestige, credibility, or some other ethical component has been ancillary to the study of such presumed results of credibility as preferences, attitude change, and information gain." (Anderson and Clevenger, 1963, p. 75).

A review of related literature revealed no previous studies concerned with the relative influential power of alcoholics as opposed to non-alcoholic communicators. Therefore, the present study seems unique in that it considers the comparative effectiveness of alcoholic versus non-alcoholic communicators as measured by attitude, retention of information, and behavior change. These measures were used to determine only the particular dichotomized variable's ability to influence these dependent variables, rather than as a definite statement of their total comparative prestige. Such a position was taken, because of the historical misuse of attitude change to measure total prestige value of the communicator.

Kulp (1934) attempted to develop an index of prestige based upon attitude change. He administered Harper's test of liberalism to more than three hundred graduate students at Columbia University. Various sub-groups of subjects used, were later told that the information communicated to them had been written by social scientists, educators, and other learned persons. The differential amount of
attitude change in regard to each of these sources was then used as the basic measure for a prestige index for each of the several professional groups. These procedures were also replicated by Bowden, Coldwell, and West (1934) in a study employing a variety of prestige levels.

Underlying these measurement techniques is the assumption that the prestige of the source is directly proportional to the ability to produce attitude shifts. This point received formalization in 1938 when Lurie defined prestige as the change in scale value of certain items brought about by attaching the name of the symbol to these items.

By attempting to develop levels of prestige according to shifts in attitudes an obvious weakness is uncovered.

"Naturally prestige measures obtained in this manner are not pure or independent measures of the variable. Moreover, to use any of these measures to test the hypothesis that prestige induces attitude change is impossible, for the measures of prestige is attitude change (Anderson and Clevenger, 1963, p. 75)."

The prestige levels of alcoholic and non-alcoholic communicators were only indirectly studied within this thesis. Future research in the areas of communication, social psychology, and education, however, should focus upon this concern.

Research concerning the effectiveness of different communicators dates back to the early era of social psychology. Early theorists believed that any person without logically developed grounds to disbelieve would submit to any communicator who possessed prestige. Early experimentation conducted by researchers such as Bowden,
Caldwell, and West (1934), Lewis (1931), and Lorge (1936) were attempts in this direction. These studies were attempting to demonstrate that people would accept communications, even without logical grounds for doing so, simply because the message had been presented and because it was advocated by a prestige source. Early research concerning prestige communicators was generally conducted within the framework of the doctrine of suggestion.

"These early psychologists concept of suggestion was very similar to our concept of hypnotism, and in fact some early writers felt that the suggestive process was identical with the hypnotic process. Because the first social psychologist were very much interested in studying the behavior of people in crowds and phenomena such as "mob hysteria" the concept of suggestion had great explanatory appeal to them (Mills, 1969, p. 143)."

The concept of suggestion did appear to hold many mysterious elements to these early psychologists as can be seen in the statement of Bowden, Caldwell, and West (1934) in which this effect was explained by stating that suggestion entered in and dulled to a considerable extent the critical abilities of the students.

The doctrine of suggestion, however, was subsequently to receive much censorious exploration into its process (Asch, 1948; Lewis, 1941). As a result of their investigations they concluded that what had previously been regarded as immediate, direct, or irrational influences on individuals because of a prestige communicator, actually had a logical base. Asch (1948), for example, pointed out that the operation of the communicator changes the subject's perception of the content of the communication.

The primary direction of recent work in regard to communicator
influence was primarily focused on the audience perception and knowledge of the communication source, and subsequent attitude change.

Hovland, Janis, and Kelley (1953) hypothesized there to be two primary components of what they term credibility of the communicator. These characteristics of the communicator are expertness and trustworthiness. These two factors are conceived of in the following way:

"An individual's tendency to accept a conclusion advocated by a given communicator will depend in part upon how well informed and intelligent he believes the communicator to be. However, a recipient may believe that a communicator is capable of transmitting valid statements, but still be inclined to reject the communication if he suspects the communicator is motivated to make nonvalid assertions. It seems necessary, therefore, to make a distinction between 1) the extent to which a communicator is perceived to be a source of valid assertions (his "expertness") and, 2) the degree of confidence in the communicator's intent to communicate the assertions he considers most valid (his trustworthiness). In any given case the weight given a communicator's assertions depend upon both of these factors, and this resultant value can be referred to as the credibility of the communicator (Hovland, Janis, and Kelley, 1953, p. 21)."

Expertness may be derived from special training or education, and from somewhat more general attitudes such as age, position, or social background. The determinants of trustworthiness are not as easily identified. They may range from position and status to personality dynamics (Secord and Backman, 1964).

Experimentation concerning the effectiveness of communicators have dealt with varied topics including: the effects of differences in prestige, credibility, likeableness and other variables upon attitudes toward political issues, evaluation of art and literature, and upon learning; the relative effectiveness of majority and
expert opinion, and the susceptibility of the sexes, different age groups, and persons of various educational levels to prestige suggestions; and the temporal effects and the permanency of the attitude change and learning induced by different levels of communicators.

A classic experiment on communicator credibility was conducted by Hovland and Weiss (1951) in which they demonstrated that a communication from a high credibility source is more persuasive than the same communication represented from a low credibility source. Four identical topics were presented to two groups within the design of this study; the advisability of selling antihistamines without a prescription, whether or not the steel industry was to blame for the then current steel shortage, the future of the movie industry with the advent of T.V., and the practicality of building an atomic powered submarine. In keeping with the attempt to present varying levels of source credibility, Oppenheimer was presented as the high credibility source with regard to the possibility of an atomic submarine, while Pravda was represented as the low credibility source. Questionnaires to measure opinions concerning these topics were administered before, immediately after, and a month after the presentation of the communications. The before questionnaire revealed that the four high credibility sources were judged to be trustworthy by 81 to 95 percent of the subjects, and the four low credibility sources were judged to be trustworthy by 1 to 21 percent. The results of the administered questionnaires indicated a significant number more (16.4 percent) of the subjects were
influenced by the high credibility than the low credibility sources. The communications attributed to high credibility sources were also perceived as more fair, and the conclusions were felt to be more justified by the facts presented in the communication. Hovland and Weiss did not find any difference in recall of information contained within the message for different credibility groups. That the change in attitude could have been caused by greater attention to the communication and increased learning of the content was not substantiated by this finding.

In a similar study Choo (1964) presented subjects with a six page written communication advocating no casual relationship between smoking and lung cancer. The communications were said to be given by either Dr. W. C. Hueper, Head of the Environmental Center section of the National Cancer Institute of Public Health Service, or J. P. Richards, Director of the Tobacco Industry of Public Relations Committee. Ratings obtained from subjects prior to receiving the communication indicated that the communicators were considered approximately equal in their knowledge of the facts. A difference was noted, however, in that the former was considered more trustworthy with regard to this particular topic. Findings indicated that the high source credibility produced more before-after change than the low source. The high credibility source was also considered more trustworthy than the lower source.

The ability of different communicators to produce varying levels of acceptance concerning a given message has been shown in many different studies. Tompkins and Samovar (1964) presented the same
informative speech under conditions of high, low, and neutral credibility. In accordance with predictions a significant relationship between credibility and attitude change was found. This change, however, was not found in behavior patterns. Dental research conducted by Cook (1967) found 192 high school students were more influenced by high credibility sources in their concern for the dangers of toothbrushing.

In a study designed to explore the perception and retention of information concerning smoking behavior, Zagona and Haiter (1966) used 57 psychology students as subjects. The study investigated the effects of credibility of source (high, medium and low) and S's smoking habits (smokers and non-smokers) on how subjects reacted to and retained information contained in a printed passage on smoking. Results indicated that those subjects who received the information attributed to sources of high and low credibility; 1) retained more information than those receiving information attributed to a source of medium credibility, 2) as credibility of the source increased, the percentage of subjects who agreed with the information and considered it as trustworthy also increased.

The effects of communicator credibility upon subsequent overt behavior was studied by Arnold (1966). Using college students from basic courses in speech he found that speakers of high credibility are more effective in producing changes in specific attitudes than speakers of lower credibility. He also concludes that speakers of high initial credibility are more effective in producing overt behavior than speakers of lower initial credibility. Both immediate

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and delayed behaviors were seen as effected by such credibility. An additional finding was that changes in attitude are not prerequisites for overt behavior change.

The greater effectiveness of high credibility sources has also been supported by studies conducted by Aronson, Turner, and Carlsmith (1963), Watts and McGuire (1964), and Johnson and Izzett (1974). Though the majority of these studies deal primarily with only the immediate influence of prestige or credibility, it would appear that the vast majority of studies support the increased persuasive potential of high credibility communicators. Within the context of this thesis the short range effects of such communicator prestige is of primary importance.

Communicator and Fear Appeal Interaction

Of considerable importance to the present study is the interaction of the two independent variables of fear appeal and communicator. There are two alternate responses to any persuasive communication. These are conformity to the communicators point of view or disparagement. Conformity and disparagement are alternative but opposing responses; if one tends to occur, the other will be inhibited. Within a highly threatening communication subjects may merely discredit the source of the communication rather than accept the recommendations contained therein. Katz (1960) suggests that this reaction is especially prevalent when there is no clear relationship between the punishment and the desired behavior in a threatening message. Negative attitudes will then be developed.
toward the communicator with associated desirable communication. Arsonson, Turner, and Carlsmith (1963) advance the concept that a highly credible source is much more difficult to associate with these negative attitudes. This means, of course, that as source credibility rises, conformity increases.

A number of studies have dealt with the interaction of source credibility and fear appeal. The vast majority of these studies point to a positive relationship between these variables and attitude change.

In an attempt to persuade P.T.A. members concerning the value of fallout shelters, Hwegell and Miller (1965) obtained results indicating that greater attitude change is produced by strong fear appeals than weak appeals when the communicator is perceived as having high credibility.

Powell and Miller (1967) also found a positive relationship between source credibility and fear appeal. Three hundred and ten individuals from four P.T.A. groups were randomly assigned to ten equal groups. Nine experimental groups listened to a recorded message and responded to attitude measures referring to the message. The tenth group was used as a control and received the attitude measure but no message. Though the message given to each group were concerned with similar topics, these varied in having three levels of each of two variables; source credibility and implied consequences. Significant differences were found between experimental and control subjects. Attitude conformity varied positively with threat and with credibility. In addition, felt anxiety was positively affected by threat and
credibility. Interaction effects were noted in relation to attitude change.

Additional support has come from experimentation by Mintz and Mills (1971) during which 58 undergraduates produced significantly greater attitude change under the interaction of known sources and physiological arousal. Incidental observations by the authors of two studies lend further acceptance to the hypothesized importance of source credibility in fear arousing appeals. While studying the smoking behavior of junior high school students, Insko, Arkoff, and Insko (1965) noted that the communicational source within their experimental treatment was highly credible (junior high school teacher). They hypothesized that the credibility of this source may have influenced the results of their study, which suggested a positive relationship between fear level and attitude change. In a study finding an interaction effect between threat and discrepancy, Rosenblatt (1962) suggested that this effect was due to the influence of both the intervening variables upon credibility. Two additional studies by Hendreck and Shaffer (1970), and Sigall and Helmreich (1969), advance additional, though limited, support for the interaction influence of source of communication and fear appeal level.

In conclusion, there appears to be considerable support for the hypothesis that source credibility does interact with fear arousing appeals to affect attitude. There is support for the generalization that strong appeals will be more effective than mild appeals when both are presented by a high credibility source. The studies also suggest that should an individual receive a strong fear appeal
attributed to a low credibility source this reaction does not imply psychological indifference. Instead, those recipients may be motivated to reduce this imbalance by further discrediting the message source.

Summary

In this chapter, an attempt has been made to review the literature on the relative effectiveness of varying levels of fear appeal communications, communicator types, and their interactional values. It would be difficult to state absolutes in reference to the trends that emerged from this survey because of the frequency of contradictory findings. For organizational purposes, this review concentrated on the literature in three areas.

In the first section, wherein the relative effectiveness of varying levels of fear appeal communications were considered, major studies were cited giving evidence of highly contradictory findings. Although the majority of early experimentation indicated a trend favoring the effectiveness of low fear levels, the vast majority of recent evidence points to the persuasive superiority of the high fear appeal. A few studies were also considered supporting a virtual lack of relationship between fear levels and persuasion. A review of the literature did disclose a paucity of pertinent fear appeal experimentation within the field of alcohol education.

Studies which identified the persuasive potency of varying communicators were reviewed in the second section of this survey. A search of the literature revealed an absence of any study dealing

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with the specific communicator types explored within the present research. Evidence from various pertinent studies suggest that the existence of credibility, in reference to the communicator, greatly aid his ability to influence his audience in a desired direction. This credibility appears to be derived from such functions as prestige, expertness, or trustworthiness.

The last section of this survey reviewed the studies which have attempted to ascertain the interactional effects of fear appeal levels and communicators. The number of studies focusing on this particular concept was extremely limited in comparison to the number of studies in relation to each of the specific variables, nevertheless, the research clearly points to a positive relationship between source credibility and fear arousing appeals. There is strong support for the generalization that strong fear appeals will be more effective than mild appeals when both are presented by a highly credible source. Should the high fear appeal be presented by a low credibility source, however, the interaction effect generates even stronger desc editing of the message and its source.
CHAPTER III

DESIGN AND METHODOLOGY

The present experimental project was designed to investigate the relative efficacy of varying communicators and fear appeal levels to promote information retention, attitude, and behavior change. Samples were drawn and the research was conducted in three junior high schools within the State of Michigan. These schools were:

Kelloggsville Junior High School
4741 South Division
Grand Rapids, Michigan

Galesburg-Augusta Junior High School
600 West Michigan
Augusta, Michigan

Schoolcraft Middle School
747 East Clay
Schoolcraft, Michigan

Sample

Four hundred and seventeen pupils enrolled in eighteen seventh and eighth grade science and health classes were made available for the study. Permission to participate was obtained from; 1) system superintendent, 2) building principal, 3) individual classroom teachers. The researcher initially contacted fifteen superintendents requesting their cooperation in the administration of the study. Of the ten systems which responded to the requesting letter, four superintendents responded favorably to the request for involvement within the study. A second letter was then sent arranging conferences.
pertaining to procedural information and possible questions to be raised by those concerned. At this point in time one of the four schools previously included as part of the prospected study withdrew.

Procedural meetings were then conducted with the superintendents representing the three school systems involved in the research. Two stipulations evolved from the meetings and were accepted by all parties. They were as follows:

1) Individual students would not be numbered, named, or identified in any way relative to their responses or scores upon the dependent variable measures.

2) Scores were not to be released in reference to individual schools, but rather as total scores of the three schools contained within the randomization of the class assignment.

During subsequent meetings with building principals and classroom teachers, the eighteen science and health classes to be used were designated.

Assignment of Subjects

Classes selected to participate in the research project were randomly assigned to one of four treatment groups and one control. This assignment was accomplished by random selection of tags (each of which contained a number symbolizing a particular class to be used). Two random selections were first drawn to serve as controls. The remaining fifteen classes were then assigned to one of four groups labeled A, B, C, and D. Upon the completion of this process the four levels of treatment were then randomly assigned to these groups. Once again this assignment was accomplished through random selection of tags, each designated as a particular treatment type.
This process of randomization aided in the elimination of confounding variables. As Kerlinger states, "we can regard random assignment as random sampling." He also states, "when a sample of a population has been drawn at random, it is possible to make statements about the characteristics or the relation between characteristics in a population (Kerlinger, 1964, p. 61)."

**Independent Variable Manipulation**

Various media have been used for the presentation of messages in studies concerned with threat appeal and communicator influence. The most common practice has been to use the printed word, probably because it is the easiest way to control extraneous variables. The least common technique is the use of the live presentation because it is the most difficult with which to control extraneous variables. The present study employed tape recorded messages to manipulate the independent variables. Many studies concerned with both fear appeal and communicator credibility have also used tape recordings within at least a section of their project. Among these are: Berkowitz and Cottingham (1960), Duke (1967), Gantt (1970), Goldstein (1959), Hewgill and Miller (1965), Insko et al (1965), Janis and Feshbach (1953), Janis and Feshbach (1954), Leventhal and Singer (1966), Millman (1968), Moltz and Thistlethwaite (1955), Powell and Miller (1967), Powell (1965), Schweitzer (1967), and Wheeler and Levine (1967).

Frandsen (1963) made a direct effort to establish the relative ability of different forms of media to transmit threat appeal.
There was some evidence which indicated that live presentations may be more persuasive than recorded material, but these in turn are both superior to written communications. These findings receive additional support from studies by Croft (1969) and Klapper (1960). Keeping in mind the difficulties in controlling extraneous variables within the live presentation the recorded communication appears to approach the optimum of control when the degree of persuasion is also a consideration.

One individual, a doctoral student at Western Michigan University, was selected to record two fifteen minute audio tapes concerning the effects of drinking alcoholic beverages. The two forms were identical in their considerations of the physical, psychological, and social factors of alcohol on the body and behavior of an individual. They did, however, differ in the amount of threat material included within the message. The strong appeal made use of examples stressing greater degrees of pain, sickness, disease, accidents, and death as a consequence of drinking. More personalized references were also made throughout the communication to "This could happen to you."

The minimal appeal made fewer references to the above conditions, or presented them in a much milder form if at all. The continual reference "This could happen to you" found within the high fear appeal was entirely absent from the low fear appeal communication.

Following is a comparison of the twelve statements and examples used within the high and low fear appeals.
<table>
<thead>
<tr>
<th>Sentence Topic</th>
<th>High Fear Example</th>
<th>Low Fear Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Effect upon the brain</td>
<td>Death in automobile accident</td>
<td>Difficulty in staying awake</td>
</tr>
<tr>
<td>2) Effect upon judgment</td>
<td>Death in accident</td>
<td>Misjudging social situation</td>
</tr>
<tr>
<td>3) Effect upon vision</td>
<td>Being hit by automobile</td>
<td>Difficulty in reading</td>
</tr>
<tr>
<td>4) Effect upon moods</td>
<td>Imprisonment for serious crime</td>
<td>Disruption of a party</td>
</tr>
<tr>
<td>5) Effect upon concentration</td>
<td>Serious industrial accident</td>
<td>Difficulty in memorization</td>
</tr>
<tr>
<td>6) Effect upon muscular coordination</td>
<td>Falling down stairs</td>
<td>Difficulty in catching ball</td>
</tr>
<tr>
<td>7) Effect upon work performance</td>
<td>Causing serious injury to patient</td>
<td>Undercharging several customers</td>
</tr>
<tr>
<td>8) Effect upon economic condition</td>
<td>Poverty</td>
<td>Less expensive automobile</td>
</tr>
<tr>
<td>9) Effect upon family</td>
<td>Divorce</td>
<td>Missing a planned event</td>
</tr>
<tr>
<td>10) Effect upon law observance</td>
<td>Death caused by negligent driving</td>
<td>Misdemeanor</td>
</tr>
<tr>
<td>11) Effect upon accident potential</td>
<td>Severe burns to face and eyes</td>
<td>Slight slip on stairs</td>
</tr>
<tr>
<td>12) Effect upon disease development</td>
<td>Korsakoff's Psychosis</td>
<td>Colds</td>
</tr>
</tbody>
</table>

The same individual produced all levels of fear appeal communication and communicator variations. The alcoholic communicator was identified by three statements positioned approximately at the beginning, middle, and end of the communication stating, "I am an alcoholic." The non-alcoholic communicator had statements positioned approximately in the same sequence stating, "I am not an alcoholic."
Through the use of tape editing the combinations of the independent variables were combined upon the taped message. The four possible combinations of the two independent variables and their dichotomized levels consisted of:

1) High Fear Appeal - Alcoholic Communicator
2) High Fear Appeal - Non-Alcoholic Communicator
3) Low Fear Appeal - Alcoholic Communicator
4) Low Fear Appeal - Non-Alcoholic Communicator

Data Presentation

The following hypotheses formulated in testable null form were investigated within this study.

Ho₁: There is no difference in the extent of reported state anxiety, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

Ho₂: There is no difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

Ho₃: There is no difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

Ho₄: There is no difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive the interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

Ho₅: There is no difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a high fear appeal

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communication, and subjects who receive a low fear appeal communication.

**H0₆**: There is no difference, one week after the experimental treatment, in the reported attitudes toward the practice of drinking alcoholic beverages, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

**H0₇**: There is no difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive an interaction of high or low fear appeal communication with an alcoholic or non-alcoholic communicator.

**H0₈**: There is no difference in the extent of information retention, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

**H0₉**: There is no difference in the extent of information retention, between subjects who receive a communication from a non-alcoholic, and subjects who receive a communication from a non-alcoholic.

**H0₁₀**: There is no difference in the extent of information retention, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

**H0₁₁**: There is no difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

**H0₁₂**: There is no difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive a communication from an alcoholic and subjects who receive a communication from a non-alcoholic.

**H0₁₃**: There is no difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

**H0₁₄**: There is no difference in the extent of reported behavior change, with respect to the consumption of
alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

Ho$_{15}$: There is no difference in the extent of reported behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

Ho$_{16}$: There is no difference in the extent of reported behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

Experimental Procedures

Having completed the random assignment procedure of classes the experimental procedures were put into operation. Classroom teachers were cued as to the type of introduction to present in reference to the researchers' appearance within the classroom. The following is the introduction used by the individual classroom teachers:

"Our guest today is Mr. ______________________. During the next half-hour we will hear a tape recording, and give our ideas concerning a certain subject. Please give him your attention."

At this time the recorder was turned on and adjusted to insure adequate volume for all those present. The class then was presented with a tape containing one of the possible communications of the two independent variables and their dicotomized levels.

Immediately following the completion of the recording the researcher presented the following instructions:

"Thank you very much for your attention during the recording. I now have a series of three questionnaires I would ask your help in completing. I will pass these to you one at a time. Please do not begin work
on any of the information asked until all have received the questionnaires. At that time I will read the instructions with you and answer any questions concerning its completion. It is also important for you to remember that these are not tests. Your answers will in no way be revealed to anyone or used against you in any way. They are merely your opinions and feelings."

Immediately following these instructions the three scales were administered to the subjects. The scales were presented in the following order:

1) Anxiety Scale
2) Attitude Scale - Form A
3) Retention Scale - Form A

All instructions were read aloud and any questions concerning the completion of the scales were answered. The scales were then collected and the class thanked for their cooperation.

After a period of seven days a second collection of data was made within each class. Once again the classroom teacher was cued as to the desired type of introduction.

"Last week Mr. _________________ visited our class. He is here once again in regard to the completion of somewhat similar materials. Please give him your attention."

At this time the experimenter presented the following message:

"I once again have a series of three questionnaires I would ask your assistance in completing. I will pass these out to you one at a time. Please do not begin work on any of the information asked until all have received the questionnaires. At that time I will read the instructions with you and answer any questions concerning its completion. It is once again important for you to remember that these are not tests. Your answers will in no way be revealed to anyone or used against you in any way. They are merely your opinions and feelings."
Immediately following these instructions the three scales were administered to the subjects. The scales were given in the following order:

1) Attitude Scale - Form B  
2) Retention Scale - Form B  
3) Behavior Scale

All instructions were read aloud and any questions concerning the completion of the scales were answered. The scales were then collected and the class thanked for their cooperation.

The use of two randomly assigned control classes were used within the research design. Data collection procedures were carried out in much the same way as the experimental treatment groups with the exception of necessary alterations.

Classroom teachers were cued as to the type of introduction desired.

"Our guest today is Mr. ________________________. During the next few minutes we will give our ideas concerning a certain subject. Please give him your attention."

At this time the class was given the identical instructions as those presented to the treatment groups with the exception of thanking them for listening to the tape recording. Immediately following these instructions, two scales were administered to the control subjects. These scales were presented in the following order:

1) Anxiety Scale  
2) Attitude Scale - Form A

All instructions were read aloud and any questions concerning the completion of the scales were answered. The scales were then
collected and the class thanked for their cooperation.

After a period of seven days a second data collection was made within each control class. Introductions and instructions were once again identical to those used within treatment groups. The second control group data collection consisted of the following scales:

1) Attitude Scale - Form B
2) Behavior Scale

All instructions were read aloud and any questions concerning the completion of the scales were answered. The scales were then collected and the control classes thanked for their cooperation.

Dependent Variable Measures

To measure attitude toward the practice of drinking alcoholic beverages each subject was given the Attitude Scale Toward Any Practice - Form A (Bues, 1934). All subjects also received the Attitude Scale Toward Any Practice - Form B (Bues, 1934). Subjects were asked to place a check before each statement with which they agreed in regard to the practice of drinking alcoholic beverages. The median of the scale values marked to show agreement is the attitude score. A high score indicates a favorable attitude toward the practice, while a lower score would indicate a less favorable attitude.

The Bues scale was developed to measure attitudes toward any practice. It was constructed using the method of equal-appearing intervals. The 37 items which make up the scale were selected from an original pool of 150 items. The two forms are matched for scale and
Q values as closely as possible. Q values ranged from 0.5 to 2.12 for items in Form A, and from 0.5 to 2.0 for items in Form B. Items and scale values are given in the Appendix.

Reliability coefficients range from .71 to .92 as reported by Remmers (1960). The scale was validated by the known-group method using drinking and petting as specific referents. Four groups of 25 subjects each were selected from a fraternity, sorority, Y.W.C.A., and a Sunday school. The most favorable attitudes toward these practices were expected to come from the fraternities, sororities, next more favorable, the Y.W.C.A. and Sunday school groups the least favorable. Drinking mean scores were 6.00 for the fraternity group, 5.17 for the sorority, 4.22 for the Y.W.C.A., and 3.42 for the Sunday school group (Remmers, 1960).

The Attitude Scale Toward Any Practice (Bues, 1934) was modified to test the possibility of a social desirability response set on the part of the students. The modification entailed asking the student to also check (in a separate column) those statements with which most of their friends would agree.

The two retention scales used within the study were identical for each subject. These scales consisted of ten statements depicting various aspects or consequences associated with the practice of drinking alcoholic beverages. Though the ten statements were all factual, only five were actually presented within the content of the audio tape recording heard by all treatment subjects. Treatment subjects were then asked to choose only those statements which they heard as part of the communicational presentation. Incorrect choices

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consisted of selecting inappropriate statements, or failure to select appropriate ones. Total scores were computed from the number correct minus one-half the number incorrect.

The anxiety scale was constructed according to the method of paired comparisons (Kerlinger, 1964). Thirteen pairs of words primarily indicated anxiety, depression, or hostility. The scale was designed to measure state anxiety within the subjects. Within the forced choice situation three items were used as discriminators of the anxiety state. Discriminator words were "anxious", "nervous", and "scared". Final scores consisted of the total number of the three words each subject indicated as best describing how he felt at that particular moment.

The final instrument used for the study was a questionnaire to measure behavior change. Subjects were directed to indicate their opportunities to drink, and their actual drinking behavior within two separate time spans; 1) during an "average" period of one week before hearing the taped message, and 2) during the post-treatment period of one week since hearing the presentation. Possible responses consisted of four Likert type scales indicating choices ranging from none to many. Two behavioral scores were obtained in reference to changes in opportunities and actual drinking behavior. Total opportunity scores were obtained by subtracting the scale values of the "average" week from the post-treatment week. In the same manner the actual behavior scores consisted of subtracting the scale value of the "average" week from the post-treatment week.
Data Analysis

Analyses of variances and T-Tests were imposed upon the data for analysis. The analysis of variance models employed were two by two factorial designs determining the effects of the manipulated variables (fear appeal dichotomized into levels of high and low, and communicator dichotomized into levels of alcoholic and non-alcoholic) on the dependent variables (attitude, retention of information and reported behavior change). Figure 1 presents the type of factorial design employed for each dependent variable.

Figure 1
Factorial Design for Dependent Variables of Communicator Type and Fear Appeal Levels

<table>
<thead>
<tr>
<th>Fear Appeal Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicator Type</td>
</tr>
<tr>
<td>Alcoholic</td>
</tr>
<tr>
<td>Non-Alcoholic</td>
</tr>
</tbody>
</table>

The T-tests were employed to measure the degree of relationship between the varying levels of fear appeal and reported state anxiety. In addition, treatment and control groups were concerned in relation to attitudes and reported behavior change by use of the T-test.

The .05 level of significance was selected as the criterion for rejecting null hypotheses formulated within this study. Though the .05 level of significance was used, it does not suggest that lesser
levels of significance are not also of possible importance (Winter, 1962).

Summary

The study sought to investigate the comparative effectiveness of:
1) high and low fear appeal, and 2) alcoholic and non-alcoholic communicators. The effects of the independent variables on attitudes, information retention, and reported behavior was investigated.

Four hundred and seventeen seventh and eighth grade students served as subjects for the study. Students enrolled in 18 classes were randomly assigned by class to one control and four treatment groups. The four levels of treatment randomly assigned to these groups consisted of:

1) High Fear Appeal - Alcoholic Communicator
2) High Fear Appeal - Non-Alcoholic Communicator
3) Low Fear Appeal - Alcoholic Communicator
4) Low Fear Appeal - Non-Alcoholic Communicator

An audio tape recording containing one of the possible treatment levels was presented to each class, exclusive of controls. These tape recordings were concerned with the effects of drinking alcoholic beverages.

Immediately following the completion of the taped presentations, measures of state anxiety, attitudes toward the practice of drinking alcoholic beverages, and retention of the communicated information were administered to all subjects.

One week following this initial measurement a second was taken in
regards to attitude toward the practice of drinking alcoholic beverages, information retention and reported behavior change.

The data were statistically analyzed by means of several two by two analyses of variance, computed to determine if relationships existed between the manipulated variables of fear appeal and communicator, and the dependent variables of attitude, retention, and reported behavior change.

Several T-tests were also used to test the ability of the varying fear appeal levels to produce differing levels of state anxiety, and to compare treatment and control groups in relation to attitudes and reported behavior change.

Research findings are reported in the following chapter.
CHAPTER IV

RESULTS

The present study sought to explore the effects of varying levels of fear appeal communication and communicators upon attitudes and behavior concerning alcohol consumption. Specifically, the study was designed to ascertain the following:

1) The relative effect of high and low fear appeal communications upon the attitude, behavior, and retention of junior high school students toward the practice of drinking alcoholic beverages.

2) The relative effect of alcoholic and non-alcoholic communicators upon the attitudes, behavior, and retention of junior high school students toward the practice of drinking alcoholic beverages.

3) The interaction effects of high and low communications with alcoholic and non-alcoholic communicators upon the attitudes, behavior, and retention of junior high school students toward the practice of drinking alcoholic beverages.

The results will be presented as follows: 1) reported state anxiety as a function of fear appeal level; 2) reported attitudes toward the practice of drinking alcoholic beverages as a function of fear appeal level and communicator; 3) retention of communicational information as a function of fear appeal level and communicator; 4) reported behavior change as a function of fear appeal level and communicator.

Reported State Anxiety as a Function of Fear Appeal Level

Anxiety scores were examined to determine whether any relationship
existed between differing levels of fear appeal communication and reported state anxiety.

The single hypothesis, stated in null form, in which this relationship was examined was:

\[ H_0: \text{There is no difference in the extent of reported state anxiety, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.} \]

In addition to hypothesis one, additional T-tests were employed to examine: 1) the difference in the extent of reported state anxiety between subjects who received a high fear appeal communication and subjects who received no fear appeal communication; 2) the difference in the extent of reported state anxiety between subjects who received a low fear appeal communication and subjects who received no fear appeal communication. The results of these T-tests are presented in Table 1.

**TABLE 1**

The T Ratio Group Comparisons of Reported State Anxiety

<table>
<thead>
<tr>
<th>Test</th>
<th>Fear Level Comparison</th>
<th>Means of Groups</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High &amp; Low</td>
<td>1.096 .5384</td>
<td>-5.19*</td>
</tr>
<tr>
<td>2</td>
<td>High &amp; Control</td>
<td>1.096 .6250</td>
<td>-3.31*</td>
</tr>
<tr>
<td>3</td>
<td>Low &amp; Control</td>
<td>.6384 .6250</td>
<td>- .10</td>
</tr>
</tbody>
</table>

Note.-*p < .05.

Inspection of Table 1, indicates that the subjects who received
the high fear appeal communication reported significantly greater state anxiety than subjects who received the low fear appeal communication (p < .001).

Examination of the results of test two reported in Table 1, indicates that subjects who received the high fear appeal communication reported significantly greater state anxiety than subjects who received no fear appeal communication (p < .001).

The results of test three shows only slight difference between the low fear appeal group and the controls with respect to the criterion (p < .91).

Summary of Data on Reported State Anxiety as a Function of Fear Appeal Level

Null hypothesis one, that there is no difference in the extent of reported state anxiety, between subjects who receive a high fear appeal communication and subjects who received no fear appeal communication is rejected.

In addition to the above hypothesis a statistically significant difference was observed between reported anxiety from subjects who received a high fear appeal communication and subjects who received no fear appeal communication.

The data analysis, however, failed to show any significant differences between subjects who received a low fear appeal communication and subjects who received no fear appeal communication.

Reported Attitudes Toward the Practice of Drinking Alcoholic Beverages as a Function of Fear Appeal Level and Communicator

Each subject's attitude toward the practice of drinking
alcoholic beverages was obtained immediately following and one week after the experimental treatment. These attitude scores were examined to determine their relationship to the independent variables of fear appeal and communicator.

The six null hypotheses in which the relationship between the independent variables and reported attitude sources was analyzed were:

$H_02$: There is no difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

$H_03$: There is no difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a communication from an alcoholic and subjects who receive a communication from a non-alcoholic.

$H_04$: There is no difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive the interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

$H_05$: There is no difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

$H_06$: There is no difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a communication from an alcoholic and subjects who receive a communication from a non-alcoholic.

$H_07$: There is no difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive the interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

Tables 2 and 3 present mean scores, summary data, and analysis data used to test the hypotheses concerning attitudes immediately following the experimental treatment.
### TABLE 2

Mean Score for Reported Attitudes Toward the Practice of Drinking Alcoholic Beverages as a Function of Fear Appeal Level and Communicator

<table>
<thead>
<tr>
<th>Communicator</th>
<th>n</th>
<th>High</th>
<th>n</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic</td>
<td>100</td>
<td>4.98</td>
<td>107</td>
<td>5.49</td>
</tr>
<tr>
<td>Non-Alcoholic</td>
<td>71</td>
<td>4.94</td>
<td>91</td>
<td>5.07</td>
</tr>
</tbody>
</table>

### TABLE 3

Summary Data and Analyses of Variance Data for Reported Attitudes Toward the Practice of Drinking Alcoholic Beverages as a Function of Fear Appeal Level and Communicator

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>ss</th>
<th>ms</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear Appeal (A)</td>
<td>1</td>
<td>19.85</td>
<td>10.85</td>
<td>3.24</td>
</tr>
<tr>
<td>Communicator (B)</td>
<td>1</td>
<td>5.23</td>
<td>5.23</td>
<td>1.56</td>
</tr>
<tr>
<td>A X B</td>
<td>1</td>
<td>3.29</td>
<td>3.29</td>
<td>0.98</td>
</tr>
<tr>
<td>Within</td>
<td>365</td>
<td>1223.89</td>
<td>3.35</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>368</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.—*p < .05.
The results of these analyses reveal that subjects who received the high fear appeal communication reported less favorable attitudes toward alcohol consumption than subjects who received low fear appeal messages, although not to a statistically significant extent (p<.07).

Further examination of the analysis indicates that individuals who received the communicational presentation from a non-alcoholic communicator reported less favorable attitudes than subjects who received the presentation from an alcoholic communicator (p<.21).

The interaction effect between the level of fear appeal and the type of communicator was also analyzed and found to be non-significant, although subjects who received the combinations of a high fear appeal communication from a non-alcoholic communicator reported the least favorable attitudes. The interaction of a low fear appeal communication from an alcoholic communicator elicited the most favorable attitudes toward the practice of drinking alcoholic beverages but not to a significant extent (p<.30).

The results of the T-tests used to compare the relationship of experimental treatment and control groups are presented in Table 4.
TABLE 4
The T Ratio Comparisons of Experimental Treatment and Control Groups In Reported Attitudes Toward Alcohol Consumption

<table>
<thead>
<tr>
<th>Test</th>
<th>Groups Compared</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Fear Appeal &amp; Control</td>
<td>1.40</td>
</tr>
<tr>
<td>2</td>
<td>Low Fear Appeal &amp; Control</td>
<td>0.23</td>
</tr>
<tr>
<td>3</td>
<td>Alcoholic Communicator &amp; Control</td>
<td>0.43</td>
</tr>
<tr>
<td>4</td>
<td>Non-Alcoholic Communicator &amp; Control</td>
<td>1.17</td>
</tr>
</tbody>
</table>

Note - *p < .05.

The results of these comparisons indicate that none of the treatment levels differed from controls at the required level of statistical probability.

Tables 5 and 6 present the means, summary data, and analysis data of the attitude scores one week after treatment.

TABLE 5
Mean Scores (One Week After Treatment) for Attitude Toward the Practice of Drinking Alcoholic Beverages as a Function of Fear Appeal Level and Communicator

<table>
<thead>
<tr>
<th>Communicator</th>
<th>Fear Appeal Level</th>
<th>n</th>
<th>High</th>
<th>n</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic</td>
<td></td>
<td>100</td>
<td>5.15</td>
<td>107</td>
<td>5.69</td>
</tr>
<tr>
<td>Non-Alcoholic</td>
<td></td>
<td>71</td>
<td>5.03</td>
<td>91</td>
<td>5.43</td>
</tr>
</tbody>
</table>
TABLE 6

Summary Data and Analysis of Variance Data for Reported Attitudes (One Week After Treatment) Toward the Practice of Drinking Alcoholic Beverages as a Function of Fear Appeal Level and Communicator

<table>
<thead>
<tr>
<th>Group</th>
<th>High Fear</th>
<th>Low Fear</th>
<th>Alcoholic Communicator</th>
<th>Non-Alcoholic Communicator</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>171</td>
<td>198</td>
<td>207</td>
<td>162</td>
<td>48</td>
</tr>
<tr>
<td>M</td>
<td>5.10</td>
<td>5.56</td>
<td>5.43</td>
<td>5.25</td>
<td>5.91</td>
</tr>
<tr>
<td>SD</td>
<td>1.57</td>
<td>1.92</td>
<td>1.78</td>
<td>1.78</td>
<td>1.59</td>
</tr>
</tbody>
</table>

Source | df | ss | ms | F
---|----|----|----|----
Fear Appeal (A) | 1 | 20.63 | 20.63 | 6.56* |
Communicator (B) | 1 | 3.64 | 3.64 | 1.16 |
A X B | 1 | 0.41 | 0.41 | 0.13 |
Within | 365 | 1148.59 | 3.15 | |
Total | 368 | |

Note. - *p < .05.

The results of the analysis of the effects of varying fear appeal levels suggests that subjects who received the high fear appeal reported significantly less favorable attitudes toward alcohol consumption one week after the experimental treatment than those subjects who received the low appeal (p < .01).

Analysis of mean scores pertaining to the communicator suggests that subjects who receive the message from a non-alcoholic communicator reported somewhat less favorable attitudes than subjects who received
the communication from an alcoholic but not to a significant probability level (p < .28).

The interaction of the two main effects of fear appeal and communicator yielded no statistically significant results. It may be noted, however, that subjects who received a high fear appeal communication from a non-alcoholic communicator reported somewhat less favorable attitudes toward drinking than other interactional combinations (p < .71).

The results of the T-tests used to compare the relationship of experimental and control groups are presented in Table 7.

**TABLE 7**
The T Ratio Comparisons of Experimental Treatment and Control Groups Attitudes Toward Alcohol Consumption (One Week After Treatment)

<table>
<thead>
<tr>
<th>Test</th>
<th>Groups Compared</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Fear Appeal &amp; Control</td>
<td>3.13*</td>
</tr>
<tr>
<td>2</td>
<td>Low Fear Appeal &amp; Control</td>
<td>1.14</td>
</tr>
<tr>
<td>3</td>
<td>Alcoholic Communicator &amp; Control</td>
<td>1.71</td>
</tr>
<tr>
<td>4</td>
<td>Non-Alcoholic Communicator &amp; Control</td>
<td>2.31*</td>
</tr>
</tbody>
</table>

Note.- *p < .05.

The results of these comparisons indicates that two of the treatment groups means for the measured attitude were statistically different in comparison to that of the controls.

Subjects who received the high fear appeal reported significantly...
less favorable attitudes toward alcohol consumption one week following the presentation than subjects who received no fear appeal communication \((p < .02)\).

The comparisons also revealed that subjects who received the presentation from a non-alcoholic communicator reported significantly less favorable attitudes one week post-treatment than subjects who received no presentation \((p < .05)\).

### Summary of Data on Reported Attitudes Toward the Practice of Drinking Alcoholic Beverages as a Function of Fear Appeal Level and Communicator

Rejection of the following null hypothesis was indicated by the analysis.

- **Ho**: There is no difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

The following null hypotheses are accepted as a result of the data analysis.

- **Ho**: There is no difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a high fear appeal communication and subjects who receive a low fear appeal communication.

- **Ho**: There is no difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

- **Ho**: There is no difference in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive the interaction of high, or low fear appeal communication with an alcoholic or non-alcoholic communicator.
Ho6: There is no difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive a communication from an alcoholic, and subjects who received a communication from a non-alcoholic.

Ho7: There is no difference, one week after the experimental treatment, in the reported attitude toward the practice of drinking alcoholic beverages, between subjects who receive the interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

Retention of Communicational Information as a Function of Fear Appeal Level and Communicator

Each subject was tested for his retention of the information contained within the communicational presentation both immediately following and one week after the experimental treatment. These retention scores were then analyzed to discern their relationship to the independent variables of fear appeal and communicator.

The six null hypotheses which were tested in accordance to the relationship between the independent variables and informational retention were:

Ho8: There is no difference in the extent of information retention, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

Ho9: There is no difference in the extent of information retention, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

Ho10: There is no difference in the extent of information retention, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

Ho11: There is no difference, one week after the experimental
treatment, in the extent of information retention, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

$H_{0_{12}}$: There is no difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive a communication from an alcoholic and subjects who receive a communication from a non-alcoholic.

$H_{0_{13}}$: There is no difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

Table 8 and 9 present mean scores, summary data, and data analysis used to test hypotheses $H_{0_{8}}$, $H_{0_{9}}$, and $H_{0_{10}}$ which are concerned with the effect of the independent variables upon retention of information.

**TABLE 8**

Mean Scores of Information Retention as a Function of Fear Appeal Level and Communicator

<table>
<thead>
<tr>
<th>Communicator</th>
<th>Fear Appeal Level</th>
<th>Fear Appeal Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>High</td>
</tr>
<tr>
<td>Alcoholic</td>
<td>100</td>
<td>3.98</td>
</tr>
<tr>
<td>Non-Alcoholic</td>
<td>71</td>
<td>3.66</td>
</tr>
</tbody>
</table>
TABLE 9
Summary Data and Analysis of Variance Data for Information Retention as a Function of Fear Appeal Level and Communicator

<table>
<thead>
<tr>
<th>Group</th>
<th>High Fear</th>
<th>Low Fear</th>
<th>Alcoholic Communicator</th>
<th>Non-Alcoholic Communicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>171</td>
<td>198</td>
<td>207</td>
<td>102</td>
</tr>
<tr>
<td>M</td>
<td>3.85</td>
<td>3.45</td>
<td>3.68</td>
<td>3.57</td>
</tr>
<tr>
<td>SD</td>
<td>1.43</td>
<td>1.52</td>
<td>1.46</td>
<td>1.54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>ss</th>
<th>ms</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear Appeal (A)</td>
<td>1</td>
<td>14.03</td>
<td>14.03</td>
<td>6.36*</td>
</tr>
<tr>
<td>Communicator (B)</td>
<td>1</td>
<td>0.84</td>
<td>0.84</td>
<td>0.38</td>
</tr>
<tr>
<td>A X B</td>
<td>1</td>
<td>3.90</td>
<td>3.90</td>
<td>1.77</td>
</tr>
<tr>
<td>Within</td>
<td>365</td>
<td>805.48</td>
<td>2.21</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>368</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.— *p < .05.

It is evident from the analysis that subjects who received the high fear appeal communication retained significantly more of the message content than subjects who received the low fear appeal communication (p < .01). All other tested relationships including the effects of communicator types and interaction of fear appeal and communicator are not statistically significant.

In contrasting the effectiveness of the two communicator types results indicated a trend, but not at a significant level, that
audiences who heard the alcoholic communicator scored higher on retention than audiences who heard the non-alcoholic communicator ($p < .53$).

An interaction effect between fear appeal levels and communicator type was also observed. It appears that subjects who received a high fear appeal communication from an alcoholic speaker retained the most information, while subjects who heard a low fear appeal from a non-alcoholic retained the least. These differences, however, were not statistically significant ($p < .18$).

Presented in Tables 10 and 11 are the means, summary data and analysis data of the retention scores taken one week after treatment.

**TABLE 10**

Mean Scores (One Week After Treatment) of Information Retention as a Function of Fear Appeal Level and Communicator

<table>
<thead>
<tr>
<th>Communicator</th>
<th>Fear Appeal Level</th>
<th>n</th>
<th>High</th>
<th>n</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic</td>
<td></td>
<td>100</td>
<td>2.01</td>
<td>1.07</td>
<td>1.85</td>
</tr>
<tr>
<td>Non-Alcoholic</td>
<td></td>
<td>71</td>
<td>1.54</td>
<td>91</td>
<td>2.01</td>
</tr>
</tbody>
</table>

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| Table 11: Summary Data and Analysis of Variance Data (One Week After Treatment) for Information Retention as a Function of Fear Appeal Level and Communicator |
|----------------------------------|----------------|----------------|----------------|----------------|
|                                  | High Fear      | Low Fear       | Alcoholic Communicator | Non-Alcoholic Communicator |
| Group                            | N              | M              | SD              | N              | M              | SD              |
| N                                | 171            | 1.81           | 1.62            | 198            | 1.92           | 1.65            | 207            | 1.92           | 1.49            | 162            | 1.80           | 1.81            |
| Source                           | df            | ss             | ms             | f              |
| Fear Appeal (A)                  | 1             | 1.09           | 1.09            | 0.41           |
| Communicator (B)                 | 1             | 1.47           | 1.47            | 0.55           |
| A X B                            | 1             | 9.20           | 9.20            | 3.42           |
| Within                           | 365           | 982.31         | 2.69            |
| Total                            | 368           |                |                |

Note. - *p < .05.

Table 11 failed to reveal any statistically significant difference in retention over a one week period between subjects who received the low fear appeal and subjects who received the high fear appeal (p < .52).

The results of the analysis with respect to communicator type revealed slight, but insignificant, increased information retention on the part of those subjects who received the information from an alcoholic as opposed to a non-alcoholic communicator (p < .45).

The interaction of the two independent variables approached but
failed to reach statistical significance ($p < .06$). In light of the analysis it appears that the interactional effects of high fear appeal with an alcoholic communicator was approximately equal to the effects of a low fear appeal, non-alcoholic communicator in producing the highest level of informational retention after a one week period. The interaction of high fear appeal with a non-alcoholic communicator appeared to be the least effective in this regard.

Summary of Data on Information Retention as a Function of Fear Appeal Level and Communicator

The data in the preceding analysis represented group differences concerning scores on the retention scales given immediately after and one week following the experimental treatment.

As a result of the analysis concerning information retention the following null hypothesis was rejected.

$H_{08}$: There is no difference in the extent of information retention, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

The analysis could not provide support for the rejection of the following hypothesis.

$H_{09}$: There is no difference, in the extent of information retention, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

$H_{10}$: There is no difference, in the extent of information retention, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

$H_{11}$: There is no difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive a high fear appeal communication and subjects who receive a low fear appeal communication.
appeal communication, and subjects who receive a low fear appeal communication.

$H_{012}$: There is no difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

$H_{013}$: There is no difference, one week after the experimental treatment, in the extent of information retention, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

Reported Behavior Change as a Function of Fear Appeal Level and Communicator

Each subject was questioned about his or her behavior change toward alcohol consumption one week following treatment. These reported behavior change scores were then analyzed with reference to their relationship to the independent variables of fear appeal and communicator.

The three null hypotheses tested were:

$H_{014}$: There is no difference in the extent of reported behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

$H_{015}$: There is no difference in the extent of reported behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

$H_{016}$: There is no difference in the extent of reported behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

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Tables 12 and 13 contain the mean scores, summary data, and analysis data used to test these three hypotheses.

**TABLE 12**

Mean Scores of Reported Behavior Change as a Function of Fear Appeal and Communicator

<table>
<thead>
<tr>
<th>Communicator</th>
<th>Fear Appeal Level</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic</td>
<td>n</td>
<td>4.17</td>
<td>4.28</td>
</tr>
<tr>
<td>Non-Alcoholic</td>
<td>71</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>91</td>
<td>4.04</td>
</tr>
</tbody>
</table>
### TABLE 13

Summary Data and Analysis of Variance Data of Reported Behavior Change as a Function of Fear Appeal and Communicator

<table>
<thead>
<tr>
<th>Group</th>
<th>High Fear</th>
<th>Low Fear</th>
<th>Alcoholic Communicator</th>
<th>Non-Alcoholic Communicator</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>171</td>
<td>198</td>
<td>207</td>
<td>162</td>
<td>48</td>
</tr>
<tr>
<td>M</td>
<td>4.09</td>
<td>4.17</td>
<td>4.22</td>
<td>4.02</td>
<td>4.16</td>
</tr>
<tr>
<td>SD</td>
<td>0.74</td>
<td>0.81</td>
<td>0.78</td>
<td>0.77</td>
<td>1.07</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>ss</th>
<th>ms</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear Appeal (A)</td>
<td>1</td>
<td>0.61</td>
<td>0.61</td>
<td>1.00</td>
</tr>
<tr>
<td>Communicator (B)</td>
<td>1</td>
<td>3.85</td>
<td>3.85</td>
<td>6.34*</td>
</tr>
<tr>
<td>A X B</td>
<td>1</td>
<td>0.10</td>
<td>0.10</td>
<td>0.16</td>
</tr>
<tr>
<td>Within</td>
<td>365</td>
<td>221.52</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>368</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.— *p < .05.

The results of the analysis of reported behavior change reported in Table 13, reveals that subjects who received the low fear appeal reported more extensive behavior change than subjects who received the high fear appeal communication. However, the difference was not statistically significant (p < .31).

Further examination of the data analysis indicates that individuals who received the communication presentation from an alcoholic communicator reported significantly greater behavior change.
than individuals who received the presentation from a non-alcoholic communicator (p < .01).

An interaction effect between the level of fear appeal and the type of communicator was also tested and found to be statistically non-significant (p < .68). Subjects who heard a low fear appeal from an alcoholic communicator reported the most behavior change. Subjects who heard a high fear appeal delivered by a non-alcoholic communicator reported the least change.

Results of T-tests comparing the relationship of treatment and control groups are presented in Table 14.

<table>
<thead>
<tr>
<th>Test</th>
<th>Groups Compared</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Fear Appeal &amp; Control</td>
<td>.49</td>
</tr>
<tr>
<td>2</td>
<td>Low Fear Appeal &amp; Control</td>
<td>-.36</td>
</tr>
<tr>
<td>3</td>
<td>Alcoholic Communicator &amp; Control</td>
<td>-.44</td>
</tr>
<tr>
<td>4</td>
<td>Non-Alcoholic Communicator &amp; Control</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Note.— *p < .05.

It is evident from these comparisons that none of the experimental treatment groups differ significantly from control groups.
Summary of Data on Reported Behavior Change as a Function of Fear Appeal and Communicator

As a result of the analysis presented in Table 14 the following null hypothesis was rejected:

$H_{015}$: There is no difference in the extent of reported behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive a communication from an alcoholic, and subjects who receive a communication from a non-alcoholic.

The following hypotheses were accepted as a consequence of the present study:

$H_{014}$: There is no difference in the extent of reported behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive a high fear appeal communication, and subjects who receive a low fear appeal communication.

$H_{016}$: There is no difference in the extent of reported behavior change, with respect to the consumption of alcoholic beverages, between subjects who receive an interaction of high or low fear appeal communication, with an alcoholic or non-alcoholic communicator.

Summary

Results of the statistical analysis concerning the specific questions posed in the present study were presented in Chapter IV. Two by two analyses of variance models and T-tests were used to analyze the data obtained from the measuring procedures used in this study. A summary of the results obtained from the statistical analysis is presented in Table 15.
### TABLE 15

Summary of Statistical Analysis for All Variables Investigated

#### Reported State Anxiety

<table>
<thead>
<tr>
<th>Test</th>
<th>Groups Compared</th>
<th>Significant Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>High and Low Fear Appeal</td>
<td>.001</td>
</tr>
<tr>
<td>T</td>
<td>High Fear Appeal and Control</td>
<td>.001</td>
</tr>
<tr>
<td>T</td>
<td>Low Fear Appeal and Control</td>
<td>.91</td>
</tr>
</tbody>
</table>

#### Reported Attitudes Toward the Practice of Drinking Alcoholic Beverages

<table>
<thead>
<tr>
<th>Test</th>
<th>Groups Compared</th>
<th>Significant Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>High and Low Fear Appeal</td>
<td>.07</td>
</tr>
<tr>
<td>F</td>
<td>Alcoholic and Non-Alcoholic Communicator</td>
<td>.21</td>
</tr>
<tr>
<td>F</td>
<td>Interaction of Fear Appeal and Communicator</td>
<td>.32</td>
</tr>
<tr>
<td>T</td>
<td>High Fear Appeal and Controls</td>
<td>.16</td>
</tr>
<tr>
<td>T</td>
<td>Low Fear Appeal and Controls</td>
<td>.81</td>
</tr>
<tr>
<td>T</td>
<td>Alcoholic Communicator and Controls</td>
<td>.66</td>
</tr>
<tr>
<td>T</td>
<td>Non-Alcoholic Communicator and Controls</td>
<td>.24</td>
</tr>
</tbody>
</table>

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Table 15 (Cont.)

Reported Attitudes Toward the Practice of Drinking Alcoholic Beverages (One Week Post Treatment)

<table>
<thead>
<tr>
<th>Test</th>
<th>Groups Compared</th>
<th>Significant Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>High and Low Fear Appeal</td>
<td>.01</td>
</tr>
<tr>
<td>F</td>
<td>Alcoholic and Non-Alcoholic Communicator</td>
<td>.28</td>
</tr>
<tr>
<td>F</td>
<td>Interaction of Fear Appeal and Communicator</td>
<td>.71</td>
</tr>
<tr>
<td>T</td>
<td>High Fear Appeal and Controls</td>
<td>.002</td>
</tr>
<tr>
<td>T</td>
<td>Low Fear Appeal and Controls</td>
<td>.25</td>
</tr>
<tr>
<td>T</td>
<td>Alcoholic Communicator and Controls</td>
<td>.08</td>
</tr>
<tr>
<td>T</td>
<td>Non-Alcoholic Communicator and Controls</td>
<td>.02</td>
</tr>
</tbody>
</table>

Retention of Communicational Information

<table>
<thead>
<tr>
<th>Test</th>
<th>Groups Compared</th>
<th>Significant Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>High and Low Fear Appeal</td>
<td>.01</td>
</tr>
<tr>
<td>F</td>
<td>Alcoholic and Non-Alcoholic Communicator</td>
<td>.53</td>
</tr>
<tr>
<td>F</td>
<td>Interaction of Fear Appeal and Communicators</td>
<td>.18</td>
</tr>
</tbody>
</table>
Table 15 (Cont.)

Retention of Communicational Information
(One Week After Treatment)

<table>
<thead>
<tr>
<th>Test</th>
<th>Groups Compared</th>
<th>Significant Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>High and Low Fear Appeal</td>
<td>.52</td>
</tr>
<tr>
<td>F</td>
<td>Alcoholic and Non-Alcoholic Communicator</td>
<td>.45</td>
</tr>
<tr>
<td>F</td>
<td>Interaction of Fear Appeal and Communicator</td>
<td>.06</td>
</tr>
</tbody>
</table>

Reported Behavior Change

<table>
<thead>
<tr>
<th>Test</th>
<th>Groups Compared</th>
<th>Significant Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>High and Low Fear Appeal</td>
<td>.31</td>
</tr>
<tr>
<td>F</td>
<td>Alcoholic and Non-Alcoholic</td>
<td>.01</td>
</tr>
<tr>
<td>F</td>
<td>Interaction of Fear Appeal</td>
<td>.68</td>
</tr>
<tr>
<td>T</td>
<td>High Fear Appeal and Controls</td>
<td>.62</td>
</tr>
<tr>
<td>T</td>
<td>Low Fear Appeal and Controls</td>
<td>.97</td>
</tr>
<tr>
<td>T</td>
<td>Alcoholic Communicators and</td>
<td>.65</td>
</tr>
<tr>
<td>T</td>
<td>Non-Alcoholic Communicators and Controls</td>
<td>.31</td>
</tr>
</tbody>
</table>

Chapter V contains a summary of the study, discussion of the findings and recommendations for possible application and future research.
CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

A review of the literature indicates that one of the continuing problems in the field of social psychology concerns discovering the relative effectiveness of varying levels of fear appeal and communicator types. The inconsistencies and conflicting findings concerning the effects of these variables leaves large unknown areas as to their practical importance and application within such fields as advertising, education, and psychotherapy. In particular, the ability of varying levels of fear appeal and communicators to mediate change is of great import.

The purpose of the present study was to elucidate communication principles concerning the effects of communicators and fear appeal levels in the area of Alcohol Education. Specifically, the research design allowed investigation into the comparative effectiveness of: 1) high and low fear appeal, and 2) alcoholic and non-alcoholic communicators. Their persuasive cogency was examined in relation to their ability to influence the attitudes, reported behavior, and information retention of junior high school students concerning the practice of drinking alcoholic beverages. Within the experimental design employed the interaction of fear appeal and communicator type was also examined.
A review of the literature revealed no previous study which examined the particular combination of dependent and independent variables considered in the present study.

Audio tape recording was the medium used to manipulate the independent variables presented to subjects. One individual was selected to record four fifteen minute recordings concerning the effects of drinking alcoholic beverages. The four forms of messages were identical in their consideration of the physical, psychological, and social factors of alcohol on the body and behavior of an individual. The messages did, however, differ greatly with respect to the amount of threat material included within the communication, and the type of communicator delivering the message. Each of the tapes contained one of the four possible combinations of the two dicotomized independent variables.

Levels of fear appeal were dicotomized into high and low. The primary difference was that the high fear appeal made greater use of examples stressing higher degrees of pain, sickness, disease, accidents, and death as a consequence of drinking than did the minimal appeal. The high appeal also contained the personalized reference "This could happen to you" throughout the communication. Such a reference was entirely absent from the low appeal.

Though the same individual produced all the recordings used in the study, the independent variable of communicator was dicotomized into levels of alcoholic and non-alcoholic. The alcoholic communicator was characterized by three statements positioned approximately at the beginning, middle, and end of the communication.
stating "I am an alcoholic." The non-alcoholic communicator level and statements positioned approximately in the same sequence stating "I am not an alcoholic."

The research project was conducted within three junior high schools within the State of Michigan. From these schools 417 seventh and eighth grade students enrolled in science and health classes participated in the study.

Classes included within the study were randomly assigned to one control and four treatment groups. Two random selections were first made to serve as controls. The remaining fifteen classes were then randomly assigned to one of four experimental groups; 1) high fear appeal with alcoholic communicator, 2) high fear appeal with non-alcoholic communicator, 3) low fear appeal with alcoholic communicator, and 4) low fear appeal with non-alcoholic communicator.

The audio tape recordings concerning the effects of drinking alcoholic beverages were played for the experimental treatment groups. Immediately following its completion measures of state anxiety, retention of pertinent information, and attitude toward the practice of drinking alcoholic beverages were administered to all subjects. One week later measures of attitudes toward the practice of drinking alcoholic beverages, informational retention, and reported behavior change were again taken.

With the exception of informational retention control subjects were presented with the same measures without hearing the audio presentation. To measure the subjects attitude toward the practice of drinking alcoholic beverages each subject was given a modified
version of the Attitude Scale Toward Any Practice (Bues, 1934). Form A of the scale was administered immediately following the experimental treatment, while Form B was used one week following treatment. The Bues scale was developed using the method of equal appearing intervals. Subjects were asked to place a check before each statement with which they would agree to in regard to the practice of drinking alcoholic beverages. The final attitude score is the median of the scale values marked to show agreement. The scale was successfully validated in reference to alcoholic beverages by the known group method. Reliability coefficients range from .71 to .92 (Remmers, 1960).

The two retention scales used within the study were identical for each subject. Ten "true" statements depicting various aspects or consequences associated with the practice of drinking alcoholic beverages were included within each scale. Subjects were asked to choose the statements which were actually presented in the audio message. Final scores were computed from the number correct minus one-half the number incorrect.

A scale to measure reported behavior change was also included within the study. Subjects were asked to indicate their actual drinking behavior within two separate time spans; 1) an average week prior to the taped message, and 2) one week following the recorded presentation. Possible responses consisted of four Likert type scale values indicating choices ranging from none to many. The reported behavior scores then consisted of subtracting the scale value of the "average" week from the post-treatment week.
The final scale to be discussed was constructed according to the method of paired comparisons to measure reported state anxiety. Within a forced choice situation thirteen pairs of words were presented to the subjects with the request that they check the word in each pair which most appropriately described how they felt at that time. Three items were used as discriminators of the anxiety state. Discriminator words were "anxious", "nervous", and "scared". Final scores consisted of the total number of these three designators the subject indicated as most descriptive of his immediate feelings.

Several two by two analysis of variance models were computed to determine if a relationship existed between the manipulated variables of fear appeal and communicator, and the dependent variables of attitude, retention, and reported behavior change.

A series of T-tests were also computed to; 1) test the efficacy of the two differing levels of fear appeal communications to elicit differences in reported state anxiety, and 2) to compare treatment and control groups in attitude and reported behavior change.

Conclusions and Discussion

The results of testing the specific hypotheses of concern in this study were presented and analyzed in Chapter IV. Conclusions and a discussion of the implications of the findings were presented in the following order; 1) the effects of high and low fear appeal communications, 2) alcoholic and non-alcoholic communicators, and 3) the interaction of these two independent variables, upon attitude, informational retention, and reported behavior change.
Fear appeal levels

To review, subjects who received the high fear appeal communication reported significantly more state anxiety than subjects who received the low fear appeal (p < .001) or controls (p < .001). The low fear appeal subjects in turn reported more state anxiety than did controls, though the difference was not significant. The lack of large differences between the low appeal group and controls was expected, due to the extremely low-keyed anxiety producing cues present within the low appeal message. On the basis of these findings it would appear that the fear appeal variable was successfully manipulated.

Although significant probability levels were not achieved, varying the intensity of the fear appeal also appeared to affect attitudes toward alcohol consumption both immediately after the message and following a one-week interim. Those subjects who received a high fear appeal reported a less favorable attitude toward that practice than subjects who received a low fear appeal (p < .07) or no presentation at all (p < .16).

After one week the attitudinal difference between high and low appeal subjects had reached even greater significance. Once again the high fear appeal subjects reported less favorable attitudes toward the practice of drinking alcoholic beverages than low fear appeal (p < .01) or control subjects (p < .002).

The findings of the present study substantiate the majority of research which indicates that high threat is superior to low threat.
in persuasion related to attitudes. Of particular interest is the increasing superiority of the high appeal to mediate attitudes over an extended period of time. After one week both levels of appeal experienced change in the direction of more favorable attitude toward this practice, however, the high fear appeal minimized this slippage most effectively. Such findings lend credibility to the superior potency of high fear appeal to affect attitudes in various time frames.

A significant relationship existed between fear appeal and informational retention measured immediately following the experimental treatment. Students who heard a high fear appeal retained more of the communicational content than subjects who received the low appeal ($p < .01$). The increase in retention favoring the high fear appeal, however, was not significantly present one week following the presentation of the recordings ($p < .52$).

The results of the present study provide partial support for the conclusion, drawn from the body of prior research relevant to the learning of message content, that level of threat is not significantly related to acquisition of factual content. Though fear appeal did increase information retention immediately following the experimental treatment, the stronger appeal exhibited its greatest differential influence on attitudes (as contrasted with the low appeal) one week following the treatment condition. However, the difference in retention had virtually disappeared after one week. Such findings support the majority of research which contends that varying amounts of informational retention is probably not a mediating variable in
reference to the differing persuasiveness of varying levels of fear appeal.

The fear appeal treatment showed least influence with respect to reported behavior change. No significant relationship between the fear appeal communications and reported behavior change existed ($p < .31$). Such a finding is interesting in view of the previously mentioned relationship between fear appeal and attitude toward the practice of drinking alcoholic beverages. Within the present study less favorable attitudes toward drinking apparently did not effect reported behavior regarding this practice. The lack of relationship is clearly seen in that high fear appeal was most influential with respect to attitudinal influence, while low fear appeal was superior, though not significantly, in influencing reported behavior change. Such findings may in part be influenced by the small portion of the sample who actually reported they consumed alcohol.

In summary, it appears that the fear appeal levels affected the reported state anxiety of experimental subjects. In reference to the efficacy of this fear appeal to mediate the other dependent variables within this research project, its potency was inconsistent. In support of the majority of previous research findings high fear appeal was observed as more influential than low appeals. It was significantly more potent in producing; 1) less favorable attitudes one week after treatment, and 2) increased informational retention immediately following the experimental treatment.
Communicators

Following the presentation concerning the consequences of alcohol consumption, it appears that subjects who received a message from a non-alcoholic communicator reported less favorable attitudes toward the practice than subjects who heard an alcoholic communicator (p < .21) or no presentation at all (p < .24).

Following a one week period the attitude ratios between the subjects who heard the two differing communicator levels remained at a fairly constant state. The subjects receiving the communication from a non-alcoholic communicator continued to report less favorable attitudes toward the practice of drinking alcoholic beverages than subjects who heard the alcoholic communicator (p < .28). The one week time lag between assessments, however, produced statistically significant differences between the non-alcoholic communicator treatment groups and the controls (p < .02).

The relationship between communicator types and informational retention exhibited the least statistical significance in comparison to the other dependent variables. No significant relationship was found in retention assessed immediately after (p < .53) or one week following the communicational presentation (p < .45). The alcoholic communicator did appear to produce the slight retentional increase observed.

A strong relationship existed between the communicator and reported behavior change. Students who received the presentation from an alcoholic communicator reported greater behavior change than
subjects who received the presentation from a non-alcoholic communicator ($p < .01$). The alcoholic communicator level of treatment did not, however, significantly increase behavior change above that reported by control groups ($p < .65$). Such a finding would imply that the alcoholic communicator is relatively impotent in altering behavior. The alcoholic communicator treatment failed to significantly increase behavior change above that reported by control groups ($p < .65$). This finding would suggest that though an alcoholic communicator may produce significantly greater reported behavior change than that of the non-alcoholic, the increase may be due as much to the impotency of the non-alcoholic to influence behavior as it is to the potency of the alcoholic.

As was the case for the fear appeal treatment a relationship between attitudes and reported behavior change was not observed. Though the non-alcoholic communicator was reported as the superior communicator level in promoting less favorable attitudes toward alcohol consumption, such a communicator was least effective in changing reported behavior.

In summary, it is difficult to make a definitive statement as to the comparative effectiveness of each communicator condition. It appeared that the non-alcoholic communicator was principally more effective in eliciting more conservative attitudinal positions in reference to alcohol consumption. Such superiority, however, was absent in reference to reported behavior change. The behavior change reported by the alcoholic treatment groups significantly exceeded that reported by the non-alcoholic treatment groups. In
light of these inconsistencies the persuasive superiority of either
type of communicator must be determined in reference to the particular
characteristics of variables to be influenced.

Interaction effects

The effects of the interaction of the independent variables were
analyzed in the present study. No significant relationship between
attitudes and the combinations of the independent variables were
observed either immediately following (p < .32) or one week after
treatment (p < .71). It is interesting to note, however, that subjects
who received a high fear appeal delivered by a non-alcoholic
communicator reported the least favorable attitudes toward alcohol
consumption in both periods of assessment. The subjects who received
the low fear appeal from an alcoholic communicator reported the most
favorable attitudes in both assessments.

Interactions were also not significantly related to the amount
of information retention when measured both immediately following the
presentation (p < .18) or one week after treatment (p < .06). The
interaction effects on information retention, however, more closely
approaches significance than with any other dependent variable. In
review, the most influential combination of the independent variables
appeared to be the high fear appeal presented by an alcoholic
communicator. The subjects receiving these levels of treatment
retained the greatest amount of information as measured by both
retention scales. The least immediate information was retained by
subjects who heard the low fear appeal delivered by an alcoholic
communicator. One week later the lack of retention was greatest for those individuals who received a high fear appeal from a non-alcoholic communicator.

To complete the analysis no significant relationship was found between reported behavior change, and the interaction of the independent variables (p < .068). The low fear appeal communication delivered by an alcoholic communicator appeared to be the most effective in producing reported behavior change, while a high appeal from a non-alcoholic was the least effective.

In summary, no statistically significant relationships were found for the interaction effects of high and low fear appeal in conjunction with alcoholic and non-alcoholic communicators. These findings run contrary to the vast majority of related studies which have found a strong positive relationship between communication source and persuasiveness of increasing fear levels.

Even if the observed differences are considered at non-significant levels, the present study does not support the superiority of any one particular interactional combination. The interactional combinations each appeared to be influential with a single dependent variable. The combination of a high fear appeal from a non-alcoholic provided the most desirable effect in relation to attitudes. The high fear appeal from an alcoholic communicator was most effective concerning retention of information. Finally, the low fear appeal delivered by an alcoholic speaker was the most influential in changing reported behavior. In view of the virtual necessity of combining a communication with a communicator within any persuasive message, it appears that the particular type of desired influence is of paramount importance in deciding what type of interactional combination should be employed.
Limitations

The present study was limited by the very nature of the population under observation, which included seventh and eighth grade students from public schools located in the State of Michigan. Whereas the study did provide data about the attitudes, retentional ability, and behavior patterns of these students, and their reactions to the communication presented, these results may only be generalized to similar populations and schools. Though a random assignment procedure was employed in assigning subjects and treatment methods used in the study, the extension of this research procedure into the elementary, high school, and even college and adult educational levels would allow sounder generalization as to its findings. Future research may give attention to these various levels.

A major limitation of the study was the relatively brief interim between assessment measures. The measurement of attitude and reported behavior within the period of one week may not actually represent enduring change. The study, however, was primarily designed to investigate communication procedures which would practically be employed over a longer period of time. Future research dealing with both extended treatment and assessment procedures would lend additional validity to the methods of communication under observation within this study.

The use of an audio tape recording, as opposed to a live communicator, also delimits the generalizability of the study. Recordings were employed to limit the number of confounding variables.
Recordings, however, are not a live person standing in front of the classroom presenting his ideas concerning the use of alcoholic beverages. Research designed to limit the possible confounding variables within a live presentation would more closely approximate a real classroom situation. The increased use of audio and visual media within the educational process, however, must be taken into account. The present study provides information about the value of the audio tape recording in influencing the variables selected for the present study.

The instruments employed to measure anxiety, retention, and reported behavior change were a limiting factor in that they are clearly in an early exploratory stage. Validity and reliability data would lend needed credibility to their use and findings. In addition, as in all psychological testing, numerous factors may have been operating besides the variable intended to be measured. Among the factors which may have influenced assessment scores were the individual student's level of defensiveness at the time of testing, beliefs about the consequences of the test performances, events that occurred immediately prior to testing, and the student's present physical condition. The randomization of the research design hopefully controlled the majority of these contaminating factors.

Implications

The purpose of this section of the chapter is; 1) to suggest ways in which use may be made of the findings of this investigation, and 2) to present some of the implications of the study for future
research.

The basic outcome of the study was the identification of specific fear appeal levels and communicator types which influence attitude and behavior toward alcoholic consumption. Knowledge of these superior conditions should aid in the development of more effective communicational programs for use in alcohol and drug education programs. The specific goals of any particular programs, however, must in the final analysis be determined by those designated with that authority. From the results of this study recommendations as to the superior communicational conditions concerning three possible goals may be offered.

Emphasis in an alcohol education program may be placed upon attitude development or modification. The present thesis would tend to confirm the notion that a high fear appeal will promote a more conservative attitude toward alcohol consumption than a low fear appeal. The nature of the superior relationship between attitudes and high fear confirms the majority of similar experimental studies conducted. Whether the communicator of the high fear is an alcoholic or non-alcoholic does not appear to be as significant as the fact that the fear level is present. However, since a communicator is necessary to any communication a non-alcoholic is recommended for such educational programs because of its superior potency in promoting conservative attitudes.

Recommendations, based on the findings of the present study, strongly support the existence of some program to promote healthy attitudes toward the practice of drinking alcoholic beverages. The fact that all levels of treatment and their interaction combinations
provided some improvement over a non-existent program points to such a need. Though the varying independent variable levels did not always reach a statistically significant level of confidence, they do give evidence as to their persuasive efficacy.

In summary it is recommended that in attempting to attain an educational goal of promoting more conservative attitudes toward alcohol consumption an educational program seems highly advantageous. High fear appeals delivered by a non-alcoholic communicator would appear to be the most effective form of presentation for such a program.

Attempting to promote retention of factual information concerning the use of alcoholic beverages constitutes a second possible goal within an alcohol education program. As a result of the present thesis, recommendations concerning the attainment of this objective are similar to those previously given pertaining to attitude influence. Once again, a program designed to promote information retention is of paramount importance. To insure the continuance of such retention would necessitate a continual process of communication treatment. The prime ingredient of such a treatment would consist of fear appeal presentations at a high level. The optimal combination of communication level and communicator recommended as a result of the findings of this study would be composed of a high fear appeal delivered by an alcoholic speaker.

Should the primary objective of an alcohol education program consist of promoting reported behavior change, the present study would advance recommendations highly different from those given in reference to attitude and retention. Such recommendations would be viewed in
relation to the age range limitations of study. The communicator seems to be of considerable import within a promotional program dealing with behavior change. To decrease the frequency of alcoholic consumption, an alcoholic communicator is highly recommended. The current study would also advance the contention that only a program using the combination of low fear appeal from an alcoholic communicator would promote any degree of desired behavior change. In actuality, as seen within the context of this study, a communicational presentation does not appear to be an effective method of decreasing the frequency of alcohol consumption. It would appear that the effectiveness of the high fear appeals, so evident in influencing attitudes and retention, does not significantly mediate behavior. Such a loss of influence is conjointly not redeemed through the strength of the alcoholic communicator.

Research suggested by the findings and limitations of the present study are as follows:

1) A need exists to extend the investigation of the particular variables within this study across a wider range of age and educational groupings. Such a research would allow greater generalization of the cumulative findings obtained from elementary to adult would benefit from the increased knowledge concerning the persuasability of these independent variables.

2) While the present study has provided knowledge of communication presentations within a classroom setting, comparable research within similar areas, such as advertising and psychotherapy, would be beneficial.

3) There is a need to explore the relative effectiveness of the differing fear appeal levels and communicator types employed within this study over a period of time longer than one week. Extended longitudinal
studies may provide more definitive relationships between dependent and independent variables.

4) Communicational procedures used within the study should be operationally conducted in conjunction with live presentations by both classroom teachers and visiting speaker who are both alcoholic or non-alcoholic.

5) Why was there a lack of relationship between the change in attitudes and reported behavior? Though only indirectly seen in this study such an indication may point to needed research.

6) The interaction of varying levels of fear appeal and communicator types should be explored on other variables. Within the literature there appears to be a paucity of studies investigating the interactional conditions of these types of variables. The exploration of a communicational process such as fear appeal without consideration for its communicator seems of little relevance. A communication must have a communicator.

7) A recommendation for additional study investigating similar instrumentation and relationships seems apropos. While the present study was adequate in its sample, and design, replication for the purpose of verification is needed.
LOW FEAR APPEAL COMMUNICATION

My name is John Robbins. **I (am/am not) an alcoholic.** During the next few minutes I would like to discuss some factors concerning the use of alcohol as a drink or beverage. These factors, while certainly not covering all the knowledge and understanding we have learned about alcohol, may give you some new ideas concerning what alcohol can do to your body and your behavior.

Alcohol in its various forms has been used as a drink since the dawn of civilization. The use of alcohol can be traced even into the stone age. It appears that man learned to brew beer even before he learned to bake bread. As man moved down through the years the use of beverage alcohol has become an important part of virtually every society in the world. Our society has also greatly accepted its use. Through the years, from the very beginning of our nation to the present day, the use of alcoholic beverages has been widespread. Only during the years from 1920 to 1933, at which time our government made the use of alcoholic beverages illegal, was it forbidden. It appears, however, that even during this period of Prohibition many of the people of our country continued drinking alcohol, if they could obtain it.

At the present the attitude of our government is that some people will drink and others will not. All our governmental bodies, however, continue to pass and enforce various types of laws concerning the sale and misuse of alcoholic beverages. For example government laws regulate the hours at which establishment selling

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alcoholic beverages may open and close, where they may be located, and how many may exist. The use of alcohol, however, continues to rise higher and higher. Indeed as we can see man has, from the beginning of time, believed there to be some value in alcohol which has led him to resist those who would take it away from him.

I (am/am not an alcoholic) and it is important for each of us to make our own judgments about the use of alcoholic beverages. We must decide for ourselves how we feel about the use of alcoholic drinks. In order to make these decisions and judgments, let's look at 12 important things to know about what alcoholic beverages can do to your body and your behavior.

Number One: The use of alcohol may effect the brain. As alcohol is used, as a drink, the efficiency of the brain is lessened. Alcohol will depress the activity of the brain, slow down its ability to regulate the body. For example, an individual who has been drinking alcohol may become tired and sleepy. He may become so tired that it is difficult for him to stay awake. To repeat, the use of alcohol may effect the brain.

Number Two: The use of alcohol may effect judgment. As the alcohol reacts upon the brain the individual may not be able to judge situations as well as when he is not drinking. For example an individual who has been drinking at a party may think everyone else wants to hear him tell every joke he has ever heard. Though he may think the jokes are very interesting, they may actually be extremely boring to those around him. To repeat, the use of alcohol may effect judgment.

Number Three: The use of alcohol may effect vision. As an individual drinks alcohol he may not be able to see as clearly as when he is not drinking. As this happens the things around him may become hazy and out of focus. For example, an individual who has been drinking may have a difficult time reading a book. He may try, with great difficulty, to read the printed material which is now blurred by the effect of alcohol. In review, the use of alcohol may effect vision.
Number Four: The use of alcohol may effect our inhibitions, or moods. This means that certain feelings inside us, which are normally under control, may be released by the effects of alcohol. The individual may then show feelings such as superiority, anger, timidity, or many others. These feelings would be different than the way he would normally feel when not drinking. For example, a person who is normally quiet and shy, may begin to be very loud and disruptive, at a party while he is drinking. To repeat, the use of alcohol may effect our inhibitions or moods.

Number Five: The use of alcohol may effect the ability to concentrate. Even small amounts of alcohol may make concentration an extremely difficult task. For example, an individual may take a much longer time to memorize a set of numbers when he is drinking than when he is not. He may practice and practice, but it just seems harder for him to concentrate enough to learn the numbers. To repeat, the use of alcohol may effect the ability to concentrate.

Number Six: The use of alcohol may effect muscular coordination. Since all voluntary movements, performed by the body, are under the control of the brain, the effects of alcohol may decrease our body coordination. The individual may attempt to carry out the same activities as when he is not drinking, but his ability to coordinate his bodily movements will not be the same. For example, an individual while playing catch with a football, may drop every ball thrown to him because his coordination is not working as well as usual. While playing catch, after drinking alcohol, as the ball falls into his hands he may not be able to successfully close his hands around the ball without dropping it in the process. To repeat, the use of alcohol may effect muscular coordination.

Number Seven: The use of alcohol, while on a job, may effect work performance. The effects of alcohol upon various areas of individuals physical and mental capabilities may influence his ability to perform the various activities needed for his particular job. For example, a service station attendant, who has been drinking, may not be alert to the meter on the gas pump. He may then put five to ten cents more gas into the tank than the customer is paying for. By doing this several times during the day the station may lose several dollars. To repeat, the use of alcohol while on a job may effect work performance.
Number Eight: The use of alcohol may effect the person's economic condition. Alcoholic beverages, like most everything else in our society, costs money. The use of alcohol may also lead to difficulty in maintaining work. The money that is spent or lost because of the use of alcohol could be used to purchase various other items. For example, an individual who has been drinking for many years may not be able to buy as expensive a car, as he may have been able to, had he saved the money he used to buy alcohol. To repeat, the use of alcohol may effect the individual's economic condition.

Number Nine: Families in which one or more members drink heavily may have problems related to the drinking. The effect of alcohol upon the members of the family may lead to actions which may anger or upset other members of the family. For example, the family may make a practice of going to the movies on Saturday afternoon. But, on this particular Saturday, the father is still feeling somewhat sick from his drinking the night before and is unable to go. Both the children and wife are disappointed that they will not be able to see the show. To repeat, families in which one or more members drink heavily may have problems related to drinking.

Number Ten: The use of alcohol may increase the possibility of breaking the law. The impaired judgment and exaggerated self-confidence sometimes brought about by drinking may produce behavior which is contrary to the law. For example, a person who has been drinking may set off fireworks without a license. Because his drinking influenced his sense of judgment he has now done something against the law for which he will be held accountable. To repeat, the use of alcohol may increase the possibility of breaking the law.

Number Eleven: The use of alcohol may increase the possibility of having an accident. Because of the various effects of alcohol upon such physical processes as sight and muscular coordination, the individual may be unable to avoid accidents as well as he might if he were not drinking. For example, an individual who has been drinking may fall and bruise his leg while attempting to walk up a flight of stairs. The alcohol made it difficult for him to control his body movements. To repeat, the use of alcohol may increase the possibility of having an accident.

Number Twelve: The use of alcohol may increase the possibility of developing disease. Individuals who
drink heavily are often apt to neglect the basic rules of health, especially diet. They are then more susceptible to disease, and not as able to recover as other individuals who do not drink. For example, a heavy drinker may, because of his not eating a proper diet, catch a greater number of colds during the year than the person who does not drink. To repeat, the use of alcohol may increase the possibility of disease.

These of course are only a few of the many factors you should consider about the practice of drinking alcohol. I (am/am not) an alcoholic and I believe it is important that each of us should attempt to learn the facts about drinking. It is only through understanding that we can make our decision concerning how we feel about alcoholic beverages. Thank you.
APPENDIX B
My name is John Robbins. I (am/am not) an alcoholic. During the next few minutes I would like to discuss some factors concerning the use of alcohol as a drink or beverage. These factors, while certainly not covering all the knowledge and understanding we have learned about alcohol, may give you some new ideas concerning what alcohol can do to your body and your behavior.

Alcohol in its various forms has been used as a drink since the dawn of civilization. The use of alcohol can be traced even into the stone age. It appears that man learned to brew beer even before he learned to bake bread. As man moved down through the years the use of beverage alcohol has become an important part of virtually every society in the world. Our society has also greatly accepted its use. Through the years, from the very beginning of our nation to the present day, the use of alcoholic beverages has been widespread. Only during the years from 1920 to 1933, at which time our government made the use of alcoholic beverages illegal, was it forbidden. It appears, however, that even during this period of Prohibition many of the people of our country continued to drink alcohol, if they could obtain it.

At present the attitude of our government is that some people will drink and others will not. All our governmental bodies, however, continue to pass and enforce various types of laws concerning the sale and misuse of alcoholic beverages. For example, government
laws regulate the hours at which establishment selling alcoholic beverages may open and close, where they may be located, and how many may exist. The use of alcohol, however, continues to rise higher and higher. Indeed as we can see man has from the beginning of time, believed there to be some value in alcohol which has led him to resist those who would take it away from him.

I (am/am not) an alcoholic and it is important for each of us to make our own judgments about the use of alcoholic beverages. We must decide for ourselves how we feel about the use of alcoholic beverages. In order to make these decisions and judgments let's look at 12 important things to know about what alcoholic beverages can do to your body and your behavior.

**Number One:** The use of alcohol will effect your brain. As alcohol is used the efficiency of your brain will be lessened. Alcohol will depress the activity of your brain, slow down its ability to regulate your body. For example, if you have been drinking alcohol you will become tired and sleepy. You may become so tired that it will be difficult for you to stay awake. If you are driving your car you may wake up on the opposite side of the road as your car runs head on into a large semi-truck at seventy miles per hour. This could happen to you. To repeat the use of alcohol will effect your brain.

**Number Two:** The use of alcohol will effect your judgment. As the alcohol reacts upon your brain you will not be able to judge situations as well as when you are not drinking. For example, if you have been drinking while cleaning your shot gun you may not use the sound judgment of checking to see if the gun is loaded. Suddenly, as the gun accidently goes off, it is too late for your sister who was standing directly in the line of fire. This could happen to you. To repeat the use of alcohol will effect your judgment.

**Number Three:** The use of alcohol will effect your vision. As you drink alcohol you will not be able to see as clearly as when you are not drinking. As this happens the things around you will become blurred and out of focus. For example, if you are drinking the street crossing sign
may appear to read "walk". However, you realize how wrong you were as the speeding car is about to strike you down. This could happen to you. To repeat, the use of alcohol will effect your vision.

Number Four: The use of alcohol will effect your inhibitions or moods. This means that certain feelings inside you, that are normally under control, may be released by the effect of drinking alcohol. You may then show feelings such as superiority, anger, timidity, or various others, which are very different from the way you would normally present yourself while not drinking. For example, you may find one night while drinking that you are more angry than at anytime in your whole life. This anger is then taken out on your neighbors' car, which you wreck and destroy. The next day you can't help but wonder why you did it as you are arrested. This could happen to you. To repeat, the use of alcohol will effect your inhibitions or moods.

Number Five: The use of alcohol will effect your ability to concentrate. Even small amounts of alcohol will make concentration an extremely difficult task. For example, as you work upon a task which requires constant concentration, your drinking will interfere with your ability to maintain the degree of concentration you need. Within a factory this could mean the loss of an arm, of even your life, beneath the crushing weight of a huge machine. This could happen to you. To repeat, the use of alcohol will effect your ability to concentrate.

Number Six: The use of alcohol will effect your muscular coordination. Since all voluntary movements done by your body are under the control of your brain, the effects of alcohol may decrease your body coordination. You may attempt to carry out the same activities as when you are not drinking, but your body movements will not be the same. For example, while you are drinking your coordination may become so poor that you fall head first while walking down a flight of stairs. In fact, your coordination may be so limited, that you cannot protect your head and face as they smash into the cement. This could happen to you. To repeat, the use of alcohol will effect your muscular coordination.

Number Seven: The use of alcohol, while on a job, will effect your work performance. The effects of alcohol, upon various areas of your physical and mental capabilities may influence your ability to perform your particular job. For example, if you were a doctor the use of alcohol
could severely effect your ability to perform an operation successfully. One slip of your instruments because of a shakey hand, or blurred vision, could produce a wound which could not be repaired. This could mean death to your patient. This could happen to you. To repeat, the use of alcohol while on a job will effect your work performance.

Number Eight: The use of alcohol will effect your economic condition. Alcoholic beverages, like everything else in our society, cost you money. The use of alcohol may also make it difficult for you to maintain a job, costing you more money. The money that is spent, or lost, because of your use of alcohol, could be used to purchase other necessary items. For example, because you may constantly be spending large amounts of money on drinking your family may never have some of the few nice things they would like. They may have to live in poverty because you continued to drink away the money they so badly needed. This could happen to you. To repeat, the use of alcohol will effect your economic condition.

Number Nine: Families in which one or more members drink heavily will have problems related to drinking. The effects of alcohol, upon the members of your family, will lead to actions which may anger or upset you and the other family members. For example, because you or your spouse have been drinking you constantly argue and fight. While this continues the children become extremely upset while seeing their parents fighting, and even striking each other. Your home life would become very depressing and miserable. It perhaps may end in divorce. This could happen to you. To repeat, families in which one or both members drink heavily will have problems related to drinking.

Number Ten: The use of alcohol will increase your possibility of breaking the law. Your impaired judgment, and exaggerated self-confidence, brought about by drinking alcohol will produce behavior which is contrary to the law. For example, because of your drinking you may drive your car when you are really not able to properly control it. As you break the law, speeding down the city street, a mother's scream is not heard in time to avoid disaster. You cannot stop the car in time to avoid running over her three year old daughter who had stumbled off the curb into the street. Because of your drinking the child could not be saved. This could happen to you. To repeat, the use of alcohol will increase your possibility of breaking the law.
Number Eleven: The use of alcohol will increase your possibility of having an accident. Because of the various effects of alcohol, upon such physical processes as your vision and coordination, you will be unable to avoid accidents as well as when you are not drinking. For example, as you are drinking you may try to place some strong chemical solution upon a high shelf. The alcohol you have been drinking may effect your coordination enough that the jar may slip out of your hands. As it falls, the harsh chemicals fly into your face, and eyes, burning them badly. This could happen to you. To repeat, the use of alcohol will increase your possibility of having an accident.

Number Twelve: The use of alcohol will increase your possibility of developing disease. If you drink heavily you will be apt to neglect the basic rules of health, especially diet. You will then become more susceptible to disease, and have more difficulty in recovering than those who do not drink. For example, if you become a heavy drinker, you could, by neglecting your diet, develop a disease called Korsakoff's Psychosis. This disease would slowly deteriorate your brain until it would be only half its normal size. This could happen to you. To repeat, the use of alcohol will increase your possibility of developing disease.

These of course are only a few of the many factors you should consider about the practice of drinking alcohol. I (am/am not) an alcoholic and I believe it is important that each of us should attempt to learn the facts about drinking. It is only through understanding that we can make our decision concerning how we feel about alcohol. Thank you.
ANXIETY SCALE

Directions: On this sheet you will find words in pairs which describe different moods or feelings. Check one and only one word in each pair which most closely describes how you feel right now. Be sure to check one of the two words in every pair. Work quickly.

1) mad ........................................ pleasant
2) sad ......................................... happy
3) mixed up .................................. sure of things
4) clean ........................................ dirty
5) angry .......................................... friendly
6) peaceful ..................................... anxious
7) scared ......................................... safe
8) good .......................................... bad
9) disgusted .................................... agreeable
10) up ............................................ down
11) wise ......................................... foolish
12) healthy ...................................... sick
13) nervous ..................................... calm
ATTITUDE TOWARD ANY PRACTICE

Form A

Scale Value

11.0 1) Is better than anything else.
10.8 2) I like this practice better than anything I can think of.
10.8 3) Is profitable to everyone.
10.6 4) Is very worthwhile.
10.0 5) Has an irresistible attraction for me.
 9.8  6) I enjoy this practice.
 9.8  7) Is liked by most everyone.
 9.7  8) I like this practice too well to give it up.
 9.5  9) Makes for happier living.
 9.2 10) Serves a good purpose.
 8.9 11) Developes cooperation.
 8.6 12) Should be appreciated by more people.
 8.4 13) Is being accepted more and more as time goes on.
 8.1 14) Has advantages.
 7.9 15) If this practice were used it would develop into a good one.
 7.5 16) There is no reason for stopping this practice.
 7.2 17) Is all right as a pastime.
 7.0 18) I like this practice a little
 6.9 19) Is all right in some cases.
 6.8 20) Is all right in few cases.
 6.0 21) My likes and dislikes for this practice are balanced.
 5.6 22) I dislike this practice but I do not object to others liking it.
 4.9 23) Isn't so bad but it is very boring.
 4.5 24) Has limitations and defects.
 4.4 25) I like many practices better than this one.
 4.0 26) Has several advantages.
 3.8 27) Has several undesirable features.
 3.4 28) Is disliked by many people.
 3.2 29) Should not be tolerated when there are so many better ones.
 3.0 30) Is not endorsed by logical-minded persons.
 2.6 31) Life would be happier without this practice.
 2.5 32) Can not benefit anyone who has common sense.
 2.2 33) Is a waste of time and money.
 1.8 34) Accomplishes nothing worth while either for the individual or society.
 1.4 35) Is sinful.
 1.2 36) I hate this practice.
 1.0 37) Is the worst thing I know.
THE PRACTICE OF DRINKING ALCOHOLIC BEVERAGES

Directions: Following is a list of statements about the practice of drinking ALCOHOLIC BEVERAGES (drinks that contain alcohol). Follow these directions in completing the scale.

1) In the column labeled "YOU" place a check before each statement with which YOU AGREE.
2) In the column labeled "FRIENDS" place a check before each statement with which MOST OF YOUR FRIENDS WOULD AGREE.

There are no right or wrong answers, only your opinions. Your answers will be kept in absolute confidence.

YOU FRIENDS

1. Is better than anything else.
   ( ) ( )

2. I like this practice better than anything I can think of.
   ( ) ( )

3. Is profitable to everyone.
   ( ) ( )

4. Is very worthwhile.
   ( ) ( )

5. Has an irresistible attraction for me.
   ( ) ( )

6. I enjoy this practice.
   ( ) ( )

7. Is liked by most everyone.
   ( ) ( )

8. I like this practice too well to give it up.
   ( ) ( )

   ( ) ( )

10. Serves a good purpose.
    ( ) ( )

11. Develops cooperation.
    ( ) ( )

12. Should be appreciated by more people.
    ( ) ( )

13. Is being accepted more and more as time goes on.
    ( ) ( )

    ( ) ( )

15. If this practice were used more it would develop into a good one.
    ( ) ( )

16. There is no reason for stopping this practice.
    ( ) ( )

17. Is all right as a pastime.
    ( ) ( )

18. I like this practice a little.
    ( ) ( )

19. Is all right in some cases.
    ( ) ( )

20. Is all right in few cases.
    ( ) ( )

21. My likes and dislikes for this practice are balanced.
    ( ) ( )

22. I dislike this practice but I do not object to others liking it.
    ( ) ( )

23. Isn't so bad but it is very boring.
    ( ) ( )

24. Has limitations and defects.
    ( ) ( )

25. I like many practices better than this one.
    ( ) ( )

26. Has several advantages.
    ( ) ( )

27. Has several undesirable features.
    ( ) ( )

28. Is disliked by many.
    ( ) ( )

29. Should not be tolerated when there are so many better ones.
    ( ) ( )

30. Is not endorsed by logical-minded persons.
    ( ) ( )

31. Life would be happier without this practice.
    ( ) ( )

32. Cannot benefit anyone who has common sense.
    ( ) ( )

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33. Is a waste of time and money.
34. Accomplishes nothing worthwhile either for the individual or society.
35. Is sinful.
36. I hate this practice.
37. Is the worst thing I know.
ATTITUDE TOWARD ANY PRACTICE

FORM B

Scale Value

11.0 1) Is the best of all.
10.9 2) I like this practice better than any other.
10.8 3) Is my favorite.
10.4 4) Develops high ideals.
10.1 5) Should be practiced by all Americans.
 9.9 6) Is a benefit to all mankind.
 9.7 7) Is beneficial to almost everyone.
 9.5 8) Aids in bringing civilization to a higher level.
 9.2 10) Is endorsed by sensible people.
 8.9 11) Many things about this practice are essential to normal living.
 8.6 12) Keeps us from being "one sided."
 8.4 13) Has value
 8.1 14) As a rule is good.
 7.9 15) Should be liked.
 7.7 16) Has more merit than demerit.
 7.2 17) Is not boring.
 7.0 18) Is endorsed by sane people.
 6.9 19) Is liked only fairly well.
 6.8 20) I would enjoy this practice if it were changed somewhat.
 6.0 21) I am not against this practice but neither am I for it.
 5.9 22) Isn't absolutely bad but isn't good either.
 4.8 23) Is a little foolish.
 4.5 24) Has drawbacks.
 4.5 25) I am not interested in this practice.
 4.0 26) Benefits few people.
 3.9 27) Has more disadvantages than advantages.
 3.4 28) Is frowned upon by the average person.
 3.1 29) Is annoying.
 3.0 30) Is frowned upon by intellectual people.
 2.6 31) We would be better off without this practice.
 2.4 32) Is approved by only stupid people.
 2.2 33) Is not endorsed by sane people.
 1.9 34) Serves no purpose.
 1.4 35) Is of no use to anyone.
 1.2 36) Is unfit for anyone.
 1.0 37) I hate this practice worse than I hate anything else.
APPENDIX G
THE PRACTICE OF DRINKING ALCOHOLIC BEVERAGES

Directions: Following is a list of statements about the practice of drinking ALCOHOLIC BEVERAGES (drinks that contain alcohol). Follow these directions in completing the scale.

1) In the column labeled "YOU" place a check (✓) before each statement with which YOU AGREE.
2) In the column labeled "FRIENDS" place a check (✓) before each statement with which MOST OF YOUR FRIENDS WOULD AGREE.

There are no right or wrong answers, only your opinions. Your answers will be kept in absolute confidence.

YOU    FRIENDS

( ) ( ) 1. Is liked only fairly well.
( ) ( ) 2. Is endorsed by sensible people.
( ) ( ) 3. I hate this practice worse than I hate anything else.
( ) ( ) 4. Many things about this practice are essential to normal living.
( ) ( ) 5. Isn't absolutely bad but isn't good either.
( ) ( ) 6. Is not endorsed by sane people.
( ) ( ) 7. Is the best of all.
( ) ( ) 8. As a rule is good.
( ) ( ) 9. We would be better off without this practice.
( ) ( ) 10. Should be practiced by all Americans.
( ) ( ) 11. Keep us from being "one-sided".
( ) ( ) 12. I like this practice better than any other.
( ) ( ) 13. Has more merit than demerit.
( ) ( ) 14. Aids in bringing civilization to a higher level.
( ) ( ) 15. Is unfit for anyone.
( ) ( ) 16. Is not boring.
( ) ( ) 17. I am not interested in this practice.
( ) ( ) 18. Is my favorite.
( ) ( ) 19. Has value.
( ) ( ) 20. Is frowned upon by the average person.
( ) ( ) 21. Is a little foolish.
( ) ( ) 22. Develops high ideals.
( ) ( ) 23. Develops high ideals.
( ) ( ) 24. Benefits few people.
( ) ( ) 25. Is a benefit to mankind.
( ) ( ) 26. Is frowned upon by intellectual people.
( ) ( ) 27. Is beneficial to almost everyone.
( ) ( ) 28. Should be liked.
( ) ( ) 29. Is of no use to anyone.
( ) ( ) 30. Has drawbacks.
( ) ( ) 31. I am not against this practice but neither am I for it.
32. Has more disadvantages than advantages.
33. Is endorsed by sane people.
34. Is fundamental for a good social life.
35. Is annoying.
36. Serves no purpose.
37. Is approved by only stupid people.
Directions: You have just heard a talk about the use of alcoholic beverages (drinks that contain alcohol). Below are a list of ten statements. Some of the statements were made in the talk, some were not. Your job is to check (✓) the box of those and only those which were part of the speech. Remember, all the statements are true, but be sure to mark only the statements which were contained in the talk.

1) Man brewed beer during the stone age.
2) A "shot" (1 ounce) of whiskey contains the same amount of alcohol as a bottle of beer.
3) With the excessive use of alcohol you may become an alcoholic.
4) The use of alcohol may effect vision.
5) Families in which one or more members drink heavily may have problems related to the drinking.
6) The use of alcohol may increase the possibility of developing disease.
7) The use of alcohol may aid your digestion.
8) The use of alcohol may increase the possibility of having an accident.
9) A 150 pound man will be dizzy after consuming five average drinks.
10) The use of alcohol may slow down your breathing.
Directions: One week ago you heard a talk about the use of alcoholic beverages (drinks that contain alcohol). Below are a list of ten statements. Some of the statements were made in that talk, some were not. Your job is to check (☑️) the box of those and only those which were part of that speech. Remember, all the statements are true, but be sure to mark only the statements which were contained in the talk.

1) The use of alcohol may increase your possibility of taking other harmful drugs.
2) The use of alcohol may effect your heart.
3) The use of alcohol while on a job may effect your work performance.
4) The use of alcohol may effect muscular coordination.
5) The use of alcohol may increase your possibility of breaking the law.
6) The use of alcohol will effect the lining of the mouth, throat, and stomach.
7) The use of alcohol will affect your body temperature.
8) The use of alcohol may effect your brain.
9) Government laws regular how many stores may sell alcohol beverages.
10) Many famous men throughout history were alcoholics.
APPENDIX J
BEHAVIOR SCALE

One week ago you heard a taped recording informing you about the results of drinking alcoholic beverages. The following questions are designed to find out if what you have learned from the taped lecture had any effect on your behavior during the past week.

Please answer each question as honestly as you can. Your honest answers are necessary if we are to understand the effectiveness of the tape recordings.

Remember, there are no right or wrong answers. Your answers will in no way be revealed to anyone, or used against you in any way. You are asked not to identify yourself to ensure the secrecy of your answers. Thank you for your cooperation.

QUESTION

1) How many opportunities have you had during the past week to drink alcoholic beverages?
   Circle one  Many  Some  Few  None

2) How many times during the past week did you actually drink alcoholic beverages?
   Circle one  Many  Some  Few  None

3) Before hearing the taped lecture concerning the effects of alcohol, how many opportunities would you normally have, during a one week period, to drink alcoholic beverages?
   Circle one  Many  Some  Few  None

4) Before hearing the taped lecture concerning the effects of alcohol, how many times, during a one week period, would you drink alcoholic beverages?
   Circle one  Many  Some  Few  None

5) Do you have any comments or ideas concerning the taped lecture you heard about drinking alcoholic beverages?


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