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AN ABSTRACT OF THE THESIS of Sandra Lee Kelley and
Lane Alan Myers for the Master of Social Work presented
May 12, 1970.

Title: A Study of the Effects of Professional Authority on
the Attitude Change of High School Sophomores.

APPROVED BY MEMBERS OF THE THESIS COMMITTEE:

David L. Cressler, Chairman

Arthur C. Emlen

Lynn E. Thompson

This research project was designed to test, directly,
the effects of perceived professional authority on producing
attitude change among high school sophomores. The study util-
ized a social psychological theoretical orientation to examine
a specific aspect of socially mediated information, namely,
persuasive communication as it is influenced by the source or
communicator of the persuasive message. "Authority," as it
has been defined in this study, includes two factors: (1) the
prestige and (2) the credibility of the source. The two pro-

fessions selected were that of a physician and a social worker. It was expected that the physician, by virtue of his "higher perceived authority," as evidenced by previous research would be more effective in producing attitude change than would the social worker.

Data was obtained by means of a modified version of the traditional pretest-posttest with control group design. Alcohol usage and abuse was selected as the topic of the persuasive communication. The dependent variable selected for study was the students' attitudes toward alcohol usage, as measured by the scores they received on an attitude instrument. The independent variable was the perceived authority of the source or communicator.

The experiment utilized 140 students randomly selected from a total population of approximately 600 sophomore students. The 140 students were matched by triplets into six different experimental conditions from the scores each student received on an alcohol knowledge questionnaire. The experiment was conducted on two different days. On the first day, the students received the alcohol knowledge questionnaire; on the second day, the pretest, stimulus, and posttest were administered. A single actor, assuming both the physician and the social worker roles, delivered an identical message concerning the detrimental physical and psychological effects of alcohol usage. Statistical analyses utilized an analysis of covariance.

The results showed that the experimental manipulation of perceived authority had no significant effect upon the students' attitudes toward the use and abuse of alcohol. In other words, the physician failed to be more successful in producing attitude change than the social worker.

Implications for the field of social work are mainly speculative. Social work directly involves the process of communication. However, the social work profession has infrequently dealt directly with the issue of influence (persuasion) as it is related to attitude change. The question of authority as it relates to the effectiveness of the social worker still remains unanswered.

A STUDY OF THE EFFECTS OF PROFESSIONAL AUTHORITY
ON THE ATTITUDE CHANGE OF HIGH SCHOOL SOPHOMORES

by

SANDRA LEE KELLEY

LANE ALAN MYERS

A thesis submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SOCIAL WORK

Portland State University
1970

TO THE OFFICE OF GRADUATE STUDIES:

The members of the Committee approve the thesis of
Sandra Lee Kelley and Lane Alan Myers presented May 12,
1970.

David L. Cressler, Chairman

Arthur C. Emlen

Lynn E. Thompson

APPROVED:

Gordon Hearn, Dean, School of Social Work

Frank L. Roberts, Acting Dean of Graduate Studies

May 14, 1970

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CHAPTER I

INTRODUCTION

I. BACKGROUND

This research project is an attempt to examine attitude change as it is influenced by the authority of the communicator. The researchers of the present study believe that one of our foremost issues of concern for social workers should be: "How are we affecting those individuals with whom we work?" For men and women in a number of different professions, such as doctors, lawyers, social workers, and salesmen, influencing people is one of the primary aspects of their professional behavior.¹

Experience indicates that adaptation involves the maintenance of a dynamic balance between the needs of the people and the demands of "the system" of which they are a part. Thus, social work often entails modifying or helping to change aspects of "the system" or an individual's conception of himself, his view of others, and the attitudes of others toward him.

The authors of this research project believe that the process of influence and attitude change is of significance

¹Jerome D. Frank, Persuasion and Healing (New York: Schocken Books, 1963).

to the practice of social work. Therefore, it is unfortunate that researchers in social work have infrequently dealt directly with this issue. This has been the case in spite of the fact that psychologists and social psychologists have written extensively on the subject for many years. It was with such considerations in mind that the present project was undertaken.

II. THEORETICAL ORIENTATION OF THE STUDY: SOCIALLY MEDIATED INFORMATION AND ATTITUDE CHANGE

For the most part, the preponderance of work on influence and attitude change has been done within the field of social psychology. Newcomb, Turner, and Converse² are one of a group of researchers who have written extensively on the subject of attitude change as an aspect of human interaction. According to them, "attitude change depends very generally on the receipt of new information that in some way or another is relevant to the attitude object from the point of view of the attitude holder."³

Most researchers would agree that communication takes place in two ways: (1) directly, or (2) indirectly in a socially mediated form. When information is obtained directly, the receiver has a straightforward exposure to the subject

²Theodore M. Newcomb, Ralph H. Turner, and Philip E. Converse, Social Psychology (New York: Holt, Rinehart and Winston, Inc., 1965).

³Ibid. p. 82.

matter. For example, an individual who is at the scene of an automobile accident and actually observes the incident is receiving information about the accident directly. In contrast, indirect or socially mediated information, is information that is obtained secondhand from a source about the subject matter.⁴ In this case, the individual having directly observed the automobile accident might relay his experience to a friend, probably trying to convince his friend of the severity and unpleasantness of his experience. The friend would then be receiving his information, socially mediated, from the individual who actually witnessed the accident. This distinction is illustrated by Figure 1.

Figure 1. Diagram of the difference between direct and indirect (socially mediated) communication.

Persuasion is a special case of attitude change where information relevant to the subject matter is communicated

⁴As Hovland, Janis, and Kelley (p. 19) point out, there are many types of sources. In this research project, "source" is an individual speaker who communicates directly to the receiver(s).

to the receiver in a socially mediated form. "Typically, one party argues a point of view to another who remains essentially a 'silent partner'."⁵ Research in the area of persuasive communication and attitude change has shown that there are three main classes of factors to consider in understanding a persuasive exchange: (1) characteristics of the receiver of the information, (2) characteristics of the message, itself, that is received in the form of information about the subject matter, and (3) characteristics of the source that is delivering the message. All of these factors are important for determining the effectiveness of a communication-how favorably or unfavorably the message is received. In the present study, it is inferred that the higher an individual's score on an attitude instrument, the more favorably he has received the message.

The class of factors chosen for investigation in this research project is the characteristics of the source of a persuasive communication. Research on the subject of attitude change⁶ has shown that the evaluation of the source by the receiver affects his evaluation of the persuasive message,

⁵Newcomb, Turner, and Converse, p. 94.

⁶In the present study, attitude change has not been distinguished from the concept "opinion change." Research has shown that the relationship between these two concepts is an intimate one, and a distinction between the two has not been made by a majority of investigators.

and consequently influences the likelihood of attitude change.⁷ Thus, it can be expected that when a source is evaluated highly, he will be better able to persuade his receiver to accept what he is saying than if he is evaluated less favorably.

III. THE INFLUENCE OF AUTHORITY

Many factors contribute to the evaluation of a source. Research in this area indicates that one of the most important factors in determining the effectiveness of a communication is the perceived authority of the source or communicator.⁸ As a result, the weight given the assertions of a source by its receiver(s) will depend on subfactors associated with authority; e.g., the amount of prestige and credibility attributed to the source.

Authority refers to "consensually supported power."⁹ People accept the authority of an individual occupying a particular position because they respect his personal characteristics, they have regard for the position regardless of who

⁷H. G. Kelman and C. I. Hovland, "Reinstatement of the Communicator in Delayed Measurement of Opinion Change," J. Abnorm. Soc. Psychol., 48 (1953), pp. 327-335.

⁸The present study has defined the term "authority" in terms of the perceived prestige and credibility of the source of a persuasive communication.

⁹Newcomb, Turner, and Converse, p. 484.

occupies it, or a combination of these.¹⁰ Thus, authority is derived from the hierarchy or status of a position and may have little to do with the knowledge and skills of the individual occupying the position. For example, research on prestige rankings of occupations over the years has frequently shown that the title of the occupation is what is actually being ranked, rather than the attributes of the individual occupying the position. Thus, the capabilities of the individual may have little to do with the authority he possesses or the amount of influence he has on others. In this study, it is assumed that two professionals, a physician and a social worker, are relevant sources of authority, although one may be considered more of an authority than the other.

This hierarchial arrangement of positions built into the social structure of society confers authority on its occupants by means of group norms. These norms are perpetuated and passed from generation to generation. Thus, the amount of prestige and credibility attributed to a profession may well be largely based on the prestige and credibility associated with the position, itself, and may therefore have little to do with the knowledge, ability, and skills of the individual.

IV. VARIABLES ASSOCIATED WITH AUTHORITY

1. Prestige

¹⁰Newcomb, Turner, and Converse, p. 484.

Research on persuasive communications has shown that, in some instances, merely perceiving a particular source as advocating the new opinion will be sufficient to induce attitude change. This generally is referred to as "prestige suggestion," and in many experiments the expertise of the source is deliberately stressed.¹¹ There was a long line of experimental work in the early days of social psychology, under the category of "prestige suggestion." This work essentially showed that when the prestige of the source suggested high expertise, rather remarkable information and viewpoints might be accepted by people whose information about the subject matter was sufficiently low.

2. Credibility

More often, however, a communication includes auxiliary contents, such as appeals and arguments, which operate as incentives for inducing attitude change. In such instances, the nature of the source may affect the way in which the receiver(s) responds to these auxiliary incentives. Hovland, Janis, and Kelley have identified two important aspects of this situation: (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

¹¹S. E. Asch, "The Doctrine of Suggestion Prestige and Imitation in Social Psychology," Psychol. Rev., 55 (1948), pp. 250-276.

"trustworthiness").¹² These two elements, combined by Hovland, Janis, and Kelley, are referred to as the "credibility" of the source or communicator.

V. SURVEY OF PREVIOUS FINDINGS

1. Studies Concerning Source Credibility

Studies conducted over the past forty years have shown that the higher the credibility of the source of a persuasive communication, the greater the attitude change.¹³ In these studies, influence has been related to certain qualities attributed to the communicator by the receiver(s), which include: leadership, expertise, prestige, trustworthiness and impartiality. A number of studies have also shown that persuasive communications are the most effective when the re-

¹²Carl I. Hovland, Irving L. Janis, and Harold H. Kelley, Communication and Persuasion (1966) p. 21.

¹³M. Saadi and P. R. Farnsworth, "The Degrees of Acceptance of Dogmatic Statements and Preferences for Their Supposed Makers," J. Abnorm. Soc. Psychol., 29 (1934), pp. 143-150.

A. O. Bowden, F. F. Caldwell, and G. A. West, "A Study in Prestige," Am. J. Sociol., 40 (1934), pp. 193-204.

R. K. Merton, Mass Persuasion: The Social Psychology of a War Bond Drive (New York: Harper, 1946).

C. I. Hovland, A. A. Lumsdaine, and F. D. Sheffield, Experiments on Mass Communication (Princeton Univ. Press, 1949).

P. H. Tannenbaum, "Initial Attitude Toward Source and Concept as Factors in Attitude Change Through Communication," Pub. Opin. Quart., 20 (1956), pp. 413-425.

C. I. Hovland, I. L. Janis, and H. H. Kelley, Communication and Persuasion (New Haven and London: Yale Univ. Press, 1966).

ceiver(s) is unaware of the communicator's intent to persuade.¹⁴

A major criticism of many of the studies that have been done in the area of source credibility and attitude change is that the subjects' evaluation of the source and content of the communication itself, must be "double mediated." For example, in a study by Hovland and Weiss,¹⁵ instead of receiving a face-to-face socially mediated communication, receivers were presented the material in written form, such that the linkage of source and content had to be made indirectly. Similarly, Kelman and Hovland¹⁶ presented a communication via recording of a radio program series, which again required the receiver(s) to make a non-visual linkage between the source and the subject matter.

Another fault, discussed by Solomon,¹⁷ is the fact that experimental studies in attitude change have failed to include a control group in their designs. As a result, it is virtually impossible to investigate either the effects of

¹⁴P. F. Lazarsfeld, B. Berelson, and H. Gaudet, The People's Choice: How the Voter Makes Up His Mind in a Presidential Campaign (New York: Duall, Sloan, and Pearce, 1944).

¹⁵C. I. Hovland, W. Weiss, "The Influence of Source Credibility on Communication Effectiveness," Public Opin. Quart., 15 (1951), pp. 635-650.

¹⁶Kelman and Hovland, pp. 327-335.

¹⁷R. R. Solomon, "An Extension of Control Group Design," Psych. Bull., 46 (1949), pp. 137-150.

the educational procedure or the influence of the attitude scale. In the present study, a control group is included.

2. Studies Concerning Occupational Prestige

Over the past thirty-five years, a multitude of studies have been conducted on the subject of occupational prestige, most of which have been simple ranking studies. Researchers have found that when occupations are ranked by the general American public, consistent differences emerge in the prestige assigned to different occupations. For example, the occupation of United States Supreme Court Justice has consistently been ranked as one of the most prestigious; occupations such as prostitute, garbage collector and shoe shiner have consistently been placed at the bottom of prestige scales. Clearly, there is consistency in the ranking of various occupations over the past thirty-five years.¹⁸

VI. DEVELOPMENT OF THE CONCEPTUAL HYPOTHESES

The present study was undertaken to measure the degree

¹⁸M. Smith, "Proposals for Making a Scale of Occupational Status," Sociology and Social Research, 20 (1935), pp. 40-49.

C. C. North and P. K. Hatt, "Jobs and Occupations: A Popular Evaluation," Opin. News, 9 (1947), pp. 3-13.

W. L. Warner, M. Meeker, and K. Eels, "Occupational Composition of Social Classes," Man, Work and Society (New York: Basic Books, Inc., 1962).

R. W. Hodge, P. M. Siegel, and P. H. Rossi, "Occupational Prestige in the United States: 1925-1963," Class, Status and Power (New York: The Free Press, 1966), pp. 322-334.

L. G. Burchinal, "Agreement of Occupational Prestige as Ranked by Two Empirical Occupational Prestige Scales," J. of Soc. Psychol., 50 (1959), pp. 335-340.

of attitude change as a function of the "authority" of the source of a persuasive communication. In light of the previous research that has been done, specific hypotheses as to how the authority of the source influences the amount of attitude change have been developed.

These hypotheses are:

1. The higher the perceived authority of the source of a communication, the greater the attitude change.
2. Authoritative communications will produce significantly greater attitude change than will no communication at all.

With these two hypotheses the study will evaluate the degree to which the perceived authority of two professionals (a physician and a social worker) influences the attitude change of subjects. Since physicians have consistently ranked higher in prestige than social workers,¹⁹ we expect to find that the persuasiveness of the physician is greater than that of the social worker. There is, however, some indication that in recent years, as the field of social work has expanded, the gap in prestige rankings between the physician and the social worker may have somewhat narrowed.²⁰

¹⁹See footnote 18.

²⁰Kathleen Woodroffe, From Charity to Social Work (London: Routledge and Kegan, 1962).

VII. . . SUMMARY OF THE RESEARCH PROBLEM

In summary, the research evidence indicates that when socially mediated information is presented in an attempt to persuade, alter or change a receiver's attitudes toward certain issues, the nature and amount of change that can be expected to occur is significantly influenced by the authority (prestige and credibility) of the source or communicator.

Given the evidence that the physician has consistently been ranked significantly higher in prestige, albeit authority, than has the social worker, it is expected that the physician will be more successful in producing attitude change than will the social worker. In addition, it is expected that the visual presence of a communicator will enhance the acceptance of the ideas included in the message. Thus, more attitude change is expected to occur when the source is visibly present than when no authoritative source at all is attributed to a persuasive communication.

CHAPTER II

METHOD

I. DESIGN

1. Choice of Alcohol Usage and Abuse as a Topic

The choice of alcohol usage and abuse for the message content arose by a process of elimination. To study the effects of change, a topic was required that would be of interest to the subjects (high school students) but not over exposed to them through the media. It was felt that recently, the psycho-active drugs, e.g., L.S.D., heroine, barbituates, etc., had received a great deal of attention, especially with respect to concern about their usage among high school students. Alcohol usage was chosen, therefore, because it was an area of relevant concern for high school students, and alcohol, itself, has effects which recently have not been discussed to the extent that effects of such drugs have.

A survey of current reading material was made for the location of subject matter that was relevant to the high school population and controversial enough to stimulate interest. A list was made of various subjects related to alcohol and the frequency with which they appeared in some magazines. The survey included popular magazines such as

Post, Life, and Newsweek that would be read and readily available to a high school population. The research literature also yielded a standardized method of testing for alcohol knowledge and an alcohol attitude change questionnaire. Both were developed by the Division of Alcoholism, Alabama Department of Mental Health (Appendices B, J and L).²¹

High school sophomores were chosen because they are at the age (14-15) when alcohol becomes readily available to them from older peers. This, combined with their change to the newly acquired high school status, raises a multiplicity of questions about drinking alcohol and its effects. It was also felt that due to the subjects' ages, they would not have been previously exposed to a great deal of information about the effects of alcohol. They were to begin a health course sequence their sophomore year which would give them some information on alcohol; this would likely be their first formal introduction to the topic of alcohol usage in an instructional setting.

The area of alcohol usage was also chosen because of its importance and concern to professionals such as social workers and physicians who frequently come into contact with

²¹George E. Passey and Dempsey F. Pennington, Jr., Techniques for the Assessment of Selected Attitudes Toward Alcohol and Its Use, (Montgomery: Alabama Division of Alcoholism, 1968).

George E. Passey and Dempsey F. Pennington, Jr., Development of a Scale for the Assessment of Knowledge Concerning Alcohol and Its Use, (Montgomery: Alabama Division of Alcoholism, 1968).

problems involving its consumption. In addition, probably more than ever before in history, a multitude of controversial issues abounding within and among cultures has led to a confusing combination of factual and fictional information about alcohol usage. Finally, control of alcohol usage was tried unsuccessfully during the Prohibition Era. This emotional and legislative effort to influence its use was followed by an era when much was actually discovered about the medical ramifications of its usage.

The questionnaire from the Alabama Commission on Alcoholism used in the study involves four areas of alcohol usage and of alcoholism:

(1) Program Aspects

- a) Attitudes with respect to treatment of alcoholism.
- b) Fruitfulness of treatment.
- c) Whose responsibility is the treatment.
- d) Funding of treatment programs.
- e) Attitude with respect to education regarding alcohol.
- f) Professional training.

(2) Legal and Social Control

- a) This section was designed to determine the attitude of an individual toward a laissez-faire approach to the control of alcohol as a beverage and, at the other extreme, to a rigid prohibition of all alcoholic beverages.

(3) Attitude Toward Moderate (Social) Drinking

Moderate use of alcohol is widely practiced among high school students, themselves. Specifically, the material examines what people within a defined population feel about such a practice.

(4) Alcoholism and the Alcoholic

This section was developed based on two ideas:

- a) that the public attitude is critical to the behavior of the alcoholic, and,
- b) that a population with adverse attitudes toward alcohol usage and the alcoholic would not likely accept information regarding such matters as the support of treatment facilities for alcoholics.

2. The Control of Interaction Effects

Studies on attitude change have, for many years, utilized the traditional pretest-posttest with control group design, which controls for the main or primary effects of history (events occurring during the time span from the pretest to the posttest), maturation (effects occurring with the passage of time such as growing older, hungrier, or more tired), and the testing, (Hawthorne effect), itself. However, in recent years this design has been shown to contain a serious weakness when certain measuring instruments are used in the pretest. William D. Brooks, in a comparative study of this

problem, has pointed out that this weakness is apparently an interaction effect of the pretest instrument with the experimental variable. "When measuring instruments of a kind which may sensitize the subject in one way or another to the experimental variable are used in the pretest, the effect operates to contaminate the experimental results."²²

In contrast to the main effects of testing, history, and maturation, which manifest themselves in mean differences independent of the presence of other variables, interaction effects are joint effects which may occur even when no main effects are present.²³

Campbell has said:

Applied to the testing variable, the interaction effect might involve not a shift due solely or directly to the measurement process, but rather a sensitization of respondents to the experimental variable so that when X was preceded by O there would be a change, whereas both X and O would be without effect occurring alone.²⁴

Furthermore, sensitization, rather than creating the positive effects of producing a change in combination with the experimental variable, may also prevent detection of a

²²William D. Brooks, "Effects of a Persuasive Message Upon Attitudes: A Methodological Comparison of an Offset Before-After Design with a Pretest-Posttest Design," The Journal of Communication, XVI #3 (Sept. 1966), pp. 180-188.

²³Ibid.

²⁴Donald T. Campbell, "Factors Relevant to the Validity of Experiments in Social Settings," Psych. Bull. (July 1954), pp. 297-312.

change that might have otherwise occurred. Hovland,²⁵ in his Army studies, found that the pretest reduced the effects of the experimental variable because of the elicitation of a commitment by the subject to a given position. Similarly, Solomon²⁶ found that a spelling pretest given to children reduced the effects of training. He presented an improvement of the traditional pretest-posttest design to reduce the biasing effects of such interactions and demonstrated that the use of a three-group (one experimental and two control groups) design, and in some cases, a four-group (one experimental and three control groups) design can serve to substantially reduce interaction effects. Solomon utilizes the term "interaction" with reference to what occurs when the pretest operates directly upon the training in a way that significantly reduces the effectiveness of the training period, itself.²⁷

Campbell, in his classic discussion of how extraneous

²⁵Hovland, Lumsdaine, and Sheffield, op. cit.

²⁶Solomon, pp. 137-150.

²⁷Solomon, p. 141. "Interactions" include three areas of possible psychological biasing. First, Solomon points out that there is a great possibility that merely taking a pretest changes the subjects' attitudes toward the training procedures. Secondly, it may even change the "set" or attention factors important to the effectiveness of training. Finally, it may actually change the manner in which the subjects "perceive" the training material.

variables affect experimental validity, pointed out that in opinion and attitude research, interview and attitude tests have been shown to be highly reactive.²⁸ He stated that "In general, any measurement procedure which makes the subject conscious or aware of the fact of the experiment can be suspected of being a reactive measurement."²⁹ In addition, he found that when the measurement process is not a part of the normal environment or is actually involved in the process being studied, it is probably reactive.

Recently, however, efforts have been made to control or at least reduce those interaction effects which have been shown to greatly limit the usefulness and validity of experiments conducted in social settings. Brooks³⁰ has demonstrated in several studies the usage of a newer research design, the "offset before-after" design as a possible solution for some of these problems. Brooks hypothesized: (1) that the "offset before-after" design can control the primary effects of extraneous variables as well as does the traditional design, and (2) that the "offset before-after" design will allow for measurement of the persuasive effect of a reactive measuring instrument separate from the effect of the experimental variable. Three groups were utilized in

²⁸Campbell, pp. 297-312.

²⁹Ibid., p. 299.

³⁰Brooks, op. cit.

his study. Two groups comprised the traditional design; one with a pretest, stimulus, and a posttest; and the other with a pretest, no stimulus, and a posttest. The third group of subjects did not receive a pretest; instead, they simply heard the speech (the stimulus) and completed the posttest. The offset design utilized for the experiment is illustrated in Figure 2.

	Pretest	Stimulus	Posttest
Group A	X	X	X
Group B	X		X
Group C		X	X

Figure 2. The "Offset Before-After" Design

Brooks found that the "offset before-after" design controlled for the primary effects of extraneous variables, such as sex, age, and time of day as well as did the traditional design. More important, however, were the findings related to the interaction of the pretest with the experimental variable. Here, the direct attitude scale used was shown to be a reactive measuring instrument, based on the criteria from studies by Campbell³¹ and Crespi.³² The attitude scale used

³¹Campbell, pp. 297-312.

³²L. D. Crespi, "The Interview Effect on Polling," Pub. Opin. Quart., (1948), pp. 99-111.

in Brooks' study was shown to be "reactive" in that the "offset before-after" subjects in Group C changed their attitudes significantly, while the pretest-posttest subjects in Group B did not change their attitudes to an equal extent. Thus, the offset design allowed for a more sensitive assessment of the subjects' attitude changes than did the traditional pretest-posttest design; i.e., it registered a change in attitude that would not have been detected by the traditional design. In the traditional design, the subjects' attitudes (the phenomena being measured) would have been affected by the measuring instrument, but this effect would have been masked within the attitude change result.

To replicate the findings of Brooks' investigation, a second study was carried out at McPherson College, McPherson, Kansas in 1963,³³ utilizing the "offset before-after" design with college speech classes. The results and interpretation of the data were essentially the same as for Brooks' original experiment, verifying and substantiating his conclusions.

From the results of these studies, it appeared that the weakness of the traditional design, when reactive instruments are used, was serious enough to warrant adoption of the offset design. That is, when one uses direct attitude scale instruments, which may be reactive, such as a questionnaire administered to a live audience, he ought to seriously con-

³³Brooks, pp. 185-186.

sider the use of the "offset before-after" design, or some variant of it.

3. A Modification of Brooks' Design

The present investigation adopted a modified version of the offset design described by Brooks, based on the expectation that an interaction effect would be obtained. The modified design uses six groups - two receive the "physician" stimulus, two receive the "social worker" stimulus, and two are control groups. All of the subjects received the posttest and the scores obtained on the posttest became a base level of response for comparing the groups on attitude change. In Brooks' design, (Figure 2.) Group B did not take the posttest. In this study, it was assumed that the posttest scores would not differ from the pretest, since the time lapse between tests was only twelve minutes. It was assumed that the attitudes would not change by maturation in such a short time. However, since two different stimulus situations and two control groups were being utilized in the current study, the posttest scores were needed to provide a uniform base from which to compare all six groups. In addition, to control for the order of presentation in the three different experimental conditions, the order of pretest-no pretest situations were then alternated within the design.

II. VARIABLES

1. Definition of the Independent Variable

Source prestige was one of the aspects of the independent variable selected for study. It was assumed that the high school students' evaluations of prestige would be in accord with the prestige evaluations of the general public in America. This assumption was based on the numerous studies reviewed earlier in this report that have been conducted over the years on prestige rankings of physicians and social workers.³⁴ This variable was, however, combined with Hovland, Janis, and Kelley's³⁵ concept of credibility to constitute what the present investigators have termed "source authority." Source authority is the independent variable which was experimentally manipulated in this study.

It was assumed that the credibility of the message source-"physician" or "social worker"-was established by the introduction the actor received from the teacher of the class in which he was delivering the message. Each teacher was briefed before the experiment and was given standardized written instructions for this introduction (see Appendix A). This provided uniformity and control for the possible effects that variations in instructions might have had on the students' responses to the communicator. The rationale for having the regular teachers introduce the communicator was based on the desirability of keeping the setting as natural as possible. It was assumed that utilizing the teachers for

³⁴ Hovland, Janis, and Kelley, op. cit.

³⁵ Ibid., p. 21.

the introductions would make the situation less complicated and require a minimum of explanation beyond what was actually necessary for carrying out the experiment.

It was expected that the students had already accepted the teacher as a credible source due to their consistent exposure to and familiarity with him, and that this would function as a direct bridge for establishing the credibility and identity of the communicator. An inventory of teacher credibility was not taken, so there was no way of actually measuring this assumed relationship. However, comments from the students at the end of the experiment indicated that they had, in fact, accepted the actor as he was introduced by the teachers.

Source or communicator credibility, as the term was employed in this study, is comprised of two elements: (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").³⁶ As previously noted, both factors are important for an audience's acceptance of the material being presented in any given communication.

2. Definition of the Dependent Variable

The dependent variable, for this study, is the student's attitude toward alcohol usage, as measured by the paper-and-

³⁶Hovland, Janis, and Kelley, op. cit., p. 21.

pencil instrument previously mentioned. Attitude change has been operationally defined as the difference between the scores obtained by each student on two equivalent forms of the same test, one version taken before the presentation by the actor, and the other taken immediately following his presentation.

III. PROCEDURE

1. Sample

a) The Students

The groups for this study were drawn from the total number of sophomore students, approximately six hundred, in a high school which included a little over one-third of the secondary school population of an urban public school district. The groups were selected from biology classes, since all sophomore students were required to study biology, and the class sections were set up on a non-tracked basis. Class assignments of the students were determined on a student request basis, as well as factors affecting the actual scheduling of classes. Thus, the students were not assigned according to pre-determined criteria such as an alphabetical order or through the clustering of sections by other subject matter; i.e., membership in language classes in this particular high school would have eliminated certain students because they are only offered at times when teachers are available.

A personal information sheet (see Appendix C) was handed out to each student in these classes on the first day of testing at the school. The data indicated that the sex ratio of the sample used was almost equal, 51% male and 49% female. The age range showed a very normal curve of the three years (14, 15 and 16) which were represented-13.5% were 14, 72.4% were 15, and 14.1% were 16. A high percentage of the students (64%) indicated that they had been active in some type of extracurricular organization the year before. The social organizations were identified as being the most popular.

The question regarding religion and attendance at a religious service yielded interesting information. Of those who answered the question, 62.3% considered themselves Protestant, 19.5% Catholic, 16.4% some other faith, and 1.9% Jewish. The question of attendance at church showed 40.1% who attended regularly (weekly), 23.4% seldom (holidays and special occasions), 16.8% occasionally (less than weekly), and 19.8% never. Of the students who responded to the question regarding the grades they earned, 41.4% said they received A and B grades, 56.6% C grades, and 2.4% D and F grades.

An interesting contrast was found in the type of job the student was preparing for. Of those responding, 49.6% were preparing for a white collar job whereas only 31.5% of their fathers held such a position. The students indicated that 25.5% of them were preparing for a professional occupation

requiring at least a college degree. Only 10.3% of their fathers and 8.8% of their mothers held such a job.

b) Familial Background

In the area of education, it was not surprising that the parents were fairly close to each other with 51.8% of the fathers and 65.1% of the mothers having completed at least a year of high school. One difference was found in the individual families; if the educational achievement of the father was less than high school, then generally the mother had one or two years more education, but if the father had any college at all, the trend was reversed with the mother having 1-2 years less formal education. This trend followed in post college work: 7.0% of their fathers completed post college work but only 2.1% of their mothers had received such education. Political preference was fairly well split, but the mothers were more frequently Republican than the fathers. The income question was only answered by 69.1% of the students-some responded with "it is none of your business." The results showed that 6.9% had an income of less than \$4,000, 34.5% had an income between \$4,000-\$7,999, 38.8% had an income between \$8,000-\$11,999, and 19.8% earned above \$12,000.

2. The Actor

A single actor was employed to assume both the social worker role and the role of physician. By having the same actor assume both roles, biases of the non-verbal sort such

as gestures, voice intensity, pitch, tempo, and mannerisms, (which would be difficult either to repeat or measure) were reduced. Duncan, Rosenberg, and Finkelstein³⁷ found that when different actors were utilized in a communicative situation, "the transcribed paralinguistic and intonation behaviors functioned as significant cues and carried considerable influence, accounting for 52% of the variance in subjects' responses."³⁸

The present researchers had no way of actually measuring whether or not the actor did remain constant in his presentations and consistent in his verbal and non-verbal cues given. It was known, however, that the actor, who is actually a director of ministerial services in an institutional setting, felt that he functioned the same each time; indirectly confirming this, the lengths of the verbal presentations were very similar, being within one minute of each other.

3. Conduct of the Experiment

The principal of the high school in which the experiment was conducted, made the recommendation that biology classes should be used because of their non-tracking char-

³⁷S. Duncan, Jr., M. J. Rosenberg, and J. Finkelstein, "The Paralanguage of Experimental Bias," Sociometry, 32 (1969).

³⁸Ibid., p. 209.

acter and their large size which would afford an adequate sample. The six classroom situations were drawn from the third and fourth class periods of the day, taught by three biology teachers. The rationale for using these periods in the school day was that by doing so, it was possible to reduce the attrition in the groups as well as other biasing factors that might have been introduced by using the extreme ends of the school day, that is, by using the first and sixth periods. Natural classroom situations; i.e., actual rooms and teachers, were used to reduce the artificiality of the experimental set-up.

The first step in the experiment was a meeting, which was held with each of the teachers who were to be involved in the experiment. They were told the sequence of events, rationales, and the need for insuring that the students were not cued to the fact that an experiment was being conducted. The forms were explained and the time sequence and time limitations which would be involved in the handing out of the material was covered. Each of the teachers agreed to cooperate to the fullest of their ability.

Two days later, the personal information sheet (Appendix C) and the alcohol knowledge instrument (Appendix B), were handed out to the three teachers before the third school period to reduce the experimenter's contact with students in the actual test situation. At the beginning of each period (3rd and 4th), roll was called in each class; then the know-

ledge instrument was administered by the teachers. The teachers were asked to hand out the questionnaires first and then to explain that the students were being asked to fill them out as an information gathering device. The teachers were asked to answer no questions beyond explaining that the procedure was a method of gathering information. From all indications (student conversation and feedback from teachers), the students were accepting and completed the questionnaires without comment. The time elapsed to complete the instrument was approximately twenty minutes for each class.

The personal information sheet (Appendix C) was administered by the teachers after the knowledge instrument had been collected. This form was explained as something that would be correlated with the information gathered on the knowledge questionnaire. Again, the reaction was minimal and accepting. This form was completed in approximately twenty minutes; thus, the full period was used to complete both forms. No student failed to have adequate time to complete them both.

One week later, the final set of questionnaires were administered. Each of the teachers received a list of the students who were to be moved from their room to another. No students were missed in this process. Calling of the roll and changing rooms took approximately four minutes. Since the biology rooms are on the same floor and in the same school wing, the students did not have a great distance to travel. Then, each teacher read a different set of in-

structions to his class depending upon which stimulus the class was to receive. Pretest administration, presentation of the speech or control (study time) condition, and posttest administration were accomplished. Verbal instructions to the teachers stressed that no questions were to be answered until the end of the posttest administration. The time sequence of the experiment is illustrated by Figure 3.

THIRD PERIOD Minutes										
Participant	5	10	15	20	25	30	35	40	45	50
Teacher #1	roll call		pretest		physician		posttest		explanation	
Teacher #2	roll call		pretest		study period		posttest		explanation	
Teacher #3	roll call		social worker		posttest		explanation		free	

FOURTH PERIOD Minutes										
Participant	5	10	15	20	25	30	35	40	45	50
Teacher #1	roll call		study period			posttest		explanation		
Teacher #2	roll call		pretest		social worker		explanation		free	
Teacher #3	roll call		physician		posttest		explanation		free	

Figure 3. Minute by minute actions of the participant.

One of the experimenters used the last minutes of the class to explain to the students what had taken place. The third period group on the first day was told that they were part of a study to determine how much they knew about alcohol, and their cooperation was asked in not revealing to the fourth period class any of the material they had seen. They were told that they would receive a complete explanation the following day. Emphasis was placed on completing the questionnaires in order to draw attention away from the presenter. The experimenter did explain to the fourth period classes exactly what had taken place. On the following day, the first ten minutes of each of the third period classes were spent to explain what had happened in the experiment conducted the previous day.

CHAPTER III

FINDINGS

I. STATEMENT OF RESEARCH PROBLEM

The present study was undertaken to measure the degree of attitude change as it is a function of the "authority" of the source of a persuasive communication. Past research indicated that when socially mediated information is presented in an attempt to persuade, alter, or change a receiver's attitudes toward certain issues, the nature and amount of change that can be expected to occur is significantly influenced by the authority (prestige and credibility) of the source or communicator.

Given the evidence that physicians have consistently been ranked significantly higher in prestige, albeit authority, than have social workers, the experimenters expected to find in this study that the physician would be more successful in producing attitude change than would the social worker. In addition, it was expected that the visual presence of a communicator would enhance the acceptance of the ideas included in the message. Thus, more attitude change was expected to occur when the source was visibly present than when no authoritative source at all was attributed to a persuasive communication. However, further consideration has

shown that this hypothesis (see Chapter II) is actually an extension of the first hypothesis. Therefore, the two hypotheses have been combined and will be treated as a single hypothesis.

As is mentioned in Chapter II, the experimenters were also concerned with the interaction effects of the pretest on the posttest; as a result, a modified version of Brooks' design was adopted. As the experimenters were using direct attitude scale instruments, which may be reactive (measuring the attitude of an individual often modifies the attitude) and two different sources of authority, it became advisable to adopt a method for determining if there was an interaction effect.

II. STUDENT SAMPLE

The experiment was conducted on two different days. The scores received by each student on the alcohol knowledge questionnaire were used to match the students, who were then randomly assigned to experimental conditions within each class period (see Appendix N for further discussion of the method used). As expected, there was some attrition of students on the second day of the experiment. An F test was conducted on the score each student received on the alcohol knowledge questionnaire. The results of the F test showed that there were no significant differences between any of the classes in the same period or in scores of the students when

compared from one period to the next.

The total sample used in the experiment on both days was 140 students. These students were assigned to six different experimental conditions; the distribution of students in each experimental condition is given in Table I.

TABLE I.
EXPERIMENTAL CONDITIONS

Questionnaires Received	Physician	Social Worker	Control	Total
Pretest and Posttest	24	22	27	73
Posttest Only	19	23	25	67
Total	43	45	52	140

III. TABULATION OF PRETEST AND POSTTEST SCORES

The questions used on the pretest and posttest attitude instruments were taken directly from Techniques for the Assessment of Selected Attitudes Toward Alcohol and Its Use, a pamphlet published by the Alabama Department of Mental Health. The wording of the questions was not changed except that for questions which asked specifically about the State of Alabama, the word 'Oregon' was substituted. There was a total of 60 questions on each test (both tests were shown to be equivalent forms).

The maximum possible score on the pretest was 139. On the posttest the total possible score was 142.5. The range of scores received by the students on the pretest was from 50.8 to 130.6, and the range of scores on the posttest was from 51.3 to 134.5. The score means and standard deviations are presented in Table II. The top two rows are the pretest and posttest scores obtained from the same group of seventy-three students (see Table I). The bottom row contains scores obtained from the group of sixty-seven students who were administered only the posttest (see Table I).

TABLE II.

ALCOHOL ATTITUDE QUESTIONNAIRE:
MEANS AND STANDARD DEVIATIONS BY
EXPERIMENTAL CONDITION

	PHYSICIAN		SOCIAL WORKER		CONTROL	
	mean	stand. dev.	mean	stand. dev.	mean	stand. dev.
Pretest	99.2	18.1	102.2	15.1	109.2	11.9
Posttest	103.4	20.5	104.2	16.1	109.9	15.6
Posttest No Pre- test Con- dition	106.2	16.8	101.4	21.1	102.4	12.4

It should be noted that there is a rank order of mean differences between pretest and posttest scores. In the physician condition, the difference between the students'

scores was 4.2. In the social worker condition, the difference between the students' scores was 2.0; the control condition showed the least amount of change in scores represented at .7.

IV. EFFECT OF PRETEST ON POSTTEST SCORES

A modification of Brooks' experimental design was adopted (see Chapter II) to determine if there was any joint effect between: (1) having received or not having received the pretest, and (2) a particular experimental condition. Not only is there a question of such a joint effect (interaction), but also the analysis will answer the question of whether or not there is a significant difference between all posttest scores (reactive effect of pretesting). An analysis of variance was used to answer these two questions. Referring to Table II, the bottom two rows (posttest scores of the two groups) were used in this analysis. The results of this analysis of variance of the posttest scores are given in Table III.

TABLE III.
ANALYSIS OF VARIANCE POSTTEST SCORES

Variance Attributed To:	Sum of Squares	Degree of Freedom	Estimate of Variance	F
Total Sum of Squares	47.9	5		
Experimental Conditions	11.4	2	5.7	.42
Pretest No Pretest Condition	9.7	1	9.7	.72
Interaction	26.8	2	13.4	.99
Error		134	13.5	

The analysis reveals that the interaction effect is not significant ($F=.99$). Therefore, no joint effect prevailed between experimental conditions (physician, social worker, control) and whether or not a student received a pretest. Also, no significant difference was found between groups receiving or not receiving a pretest ($F=.72$). This is an interesting finding in light of previous research, and it will be discussed in the last chapter. Finally, the difference between posttest scores of the groups in each of the three experimental conditions is not significant ($F=.42$).

V. EFFECT OF AUTHORITY

Since we have determined that there is no interaction between pretesting and experimental condition, we are now free to determine if perceived authority did have an effect on the attitudes of the students concerning the use of alcohol. To determine this effect, the posttest scores from the three experimental conditions that received a pretest are compared, using an analysis of covariance, which adjusts the posttest mean scores to take into account the initial level of the pretest scores (compare Table II, top two rows).

The experimental hypothesis is: The higher the perceived authority of a communicator, the greater the attitude change. It can be stated statistically as it is related to the posttest mean scores. This hypothesis assumes that the mean score in the physician condition will be greater than that in the social worker condition; in turn, the mean score of the social worker condition will be greater than that of the control group condition ($MEAN_{physician} > MEAN_{social\ worker} > MEAN_{control}$). The null hypothesis is that the mean scores of the three experimental conditions will be equal ($MEAN_{physician} = MEAN_{social\ worker} = MEAN_{control}$).

The results of the analysis of covariance which was used to test the null hypothesis are contained in Table IV.

TABLE IV.
TEST FOR SIGNIFICANCE OF DIFFERENCES
AMONG ADJUSTED MEANS

Variance Attribu- table To:	Sum of Squares	Degrees of Freedom	Estimate of Variance	F
Total Sum of Squares	19,407,944.6	73		
Pretest Scores	13.0	2		
Residual Sum of Squares	19,407,931.6	71		
Experimental Conditions	642.6	2	321.3	.001
Error (that which is un- explained by above)	19,407,289.0	69	281,265.1	

The total sum of squares for the posttest scores is 19,407,944.6, which is reflected in the top row of Table IV. This is the total sum of squares that will be broken down. As was mentioned earlier, the analysis of covariance takes into consideration how much correlation there is between the pretest scores and the posttest scores; in this case, it is determined to be a sum of squares of 13.0. This extremely small sum of squares (13.0) is interesting, since previous studies concerning attitude change indicated that there

should be some correlation of pretest to posttest scores. There is a possibility, strongly suggested by this result, that the students marked the answers to the pretest form of the questionnaire randomly; i.e., they guessed.

The next row is the total sum of squares which is not explained by the effects of the pretest on the posttest but is explained by the different experimental conditions. As can be seen from the table of means (Table II), each experimental condition has a different posttest mean score. The difference among posttest mean scores is a sum of squares of 642.6. The sum, 642.6, is subtracted from 19,407,931.6, leaving a sum of squares of 19,407,289.0. This last number is called an "error." The "error" is a reflection of individual differences among the students.

The main effect of the experiment is related to the sum of squares of 642.6. This score and the error sum of squares are divided by the degrees of freedom to yield estimates of variance. The error estimate of variance is divided into the estimate of variance from the experimental conditions to yield a ratio between what can be explained by the different experimental conditions and what cannot be explained by either the experimental condition or the pretest effects. The F is extremely small, ($F=.001$). Therefore, we cannot reject the null hypothesis ($\text{MEAN}_{\text{physician}} = \text{MEAN}_{\text{social worker}} = \text{MEAN}_{\text{control}}$). Because we cannot reject this hypothesis, we must conclude that the experimental manipulation

of perceived authority had no significant effect upon the students' attitudes toward the use and abuse of alcohol.

CHAPTER IV

CONCLUSIONS

This study was undertaken to measure the degree of attitude change as a function of the "authority" of the source of a persuasive communication. It was expected that a physician would have more success in affecting attitude change than a social worker, but, in this study, the results showed that in the physician condition, there was no significantly greater change in the students' attitudes. This research design permitted the experimenters to examine the various effects the experimental conditions and pretest would have on the results. Results showed that the pretest did not have an effect (reactive or correlation) on the posttest; there was no interaction effect in the experimental conditions.

I. PRETESTING EFFECT

In Chapter III, section IV, it was found that the pretest did not have any significant effect on the outcome of the posttest scores (reactive effect). This finding is noteworthy in light of the findings of earlier studies (Chapter II), which indicated the pretesting effect would likely affect the outcome of the posttest. The effect that is measured, when comparing the mean posttest scores of

those who did receive a pretest with the means of those who did not, is related to the reactive feature of pretesting. However, the results indicated that there was no statistical difference between the posttest scores of the two groups. In the present study, there are two possible explanations for this finding. The students may not have been sufficiently stimulated (interest and curiosity aroused) by the information contained in the pretest to read it thoroughly, therefore, they may have guessed at the answers. Another possibility is that the educational effort was too short in length to significantly influence the attitudes of the students in any of the groups.

The second question concerning the effects of the pretest on the posttest can be approached by referring to the results of the analysis of covariance. In Chapter II, it was pointed out that the pretest would have a direct effect on the posttest. In other words, if all of the students were given a pretest, it would be expected that a correlation between the pretest scores and the posttest scores would be found. Table IV shows that the variance attributed to the pretest scores (13.0) is just a small fraction of the total sum of squares. Thus, it was expected that there would be some significant correlation between the students' pretest and posttest scores. The results, however, showed that in this study, there was no significant correlation between pretest scores and posttest scores. The reasons for this are, again, myriad, but the possibility that the students

guessed on the pretest is strongly suggested.

II. EFFECT OF AUTHORITY ON ATTITUDE CHANGE

There are several possible explanations to account for the finding that the students were not influenced to change their attitudes toward alcohol use and abuse. One such explanation is related to the fact that in this research project, the credibility of the teachers (see Chapter II) was assumed. It is possible that for the students, the teachers were not as credible as they were assumed to be. It was not known for sure whether or not the students did accept the introductions and instructions given them by the teachers as credible, especially since the directions were at variance with everyday classroom procedure and subject content.

As indicated in Chapter I, a review of past and current literature was made to determine the prestige rankings of various occupations. The results were taken from various representative samples that provided an indication of how the general population ranked various occupations. Prestige ratings of occupations from the population utilized in this study were not obtained, thus, it is recommended that should this type of research be conducted again, the experimenters turn to the sample that they will be using and obtain, from them, their ranking of the various occupations. By taking the specific sample into consideration, the experimenters may find it feasible to use different occupa-

tions and conduct an experiment utilizing more than two occupations. It is possible that other variables besides authority and prestige are affecting attitude change.

As was pointed out in Chapter I, there is some indication that the prestige rankings of some occupations have changed in recent years. There are strong indications that the prestige of the occupation of social worker has changed considerably over a period of a few years. Thus, it is entirely possible that the students perceive little, if any, difference in the prestige of physicians and social workers.

III. LIMITATIONS AND RECOMMENDATIONS

An evaluation of this research project revealed several limitations associated with the sample selected for study and the actual conduction of the experiment. First, the structure of the school day chosen was such that it was difficult to shift students from class to class and impossible to shift them from one class period to the next. It was found that there were limitations as to the number of variables that could be controlled while still maintaining a large enough sample. The time schedule of the classroom situation also made it difficult to give effective instructions to the students before the tests so that they would not view the material as "just another assignment." The fifty-minute class periods did not provide the students with adequate time to absorb the material included in the questionnaires or speech.

The topic that was used to determine attitude change was limited to what was thought to be controversial subject matter. It is felt that the population that is to be tested is likely the best source to determine what constitutes controversial subject material. It is possible that the topic(s) comprising the pretest should not be the same as that chosen to obtain the necessary information from the students for matching purposes (see Chapter II, discussion of sensitization).

Sophomores were presumed to be at an age where they would change their attitudes concerning alcohol use or any other controversial subject more readily than any other group, i.e., juniors or seniors, in the high school setting. Two different age groups could be used to determine at what age attitudes are more pliable.

The length of the educational effort concerning alcohol usage was extremely short, 10-11 minutes, such that the ideas presented to the students may not have been absorbed by them. Thus, it may be useful to lengthen the presentation. Another factor is the type of educational experience. The sample of students in this study received a didactic (passive) educational effort, rather than one which would enlist them as active participants, e.g., demonstrations, movies, and role playing.

Another problem has to do with the content of the speech concerning alcohol usage. The speech utilized in this study was "slanted" toward the negative which may have

caused some students to ignore what was being said. Research evidence (Chapter I, source "trustworthiness") has shown that "slanted" or one-sided communications (messages) are many times less persuasive, since the receivers may feel that the source has something to gain, personally, from having his ideas accepted. The addition of positive statements may also have the effect of gaining the attention of students who have already decided to use alcohol.

Attitude change, in this study, was measured over a very short period of time (pretest, stimulus, and posttest were administered on the same day). No attempt was made to determine if the changes in attitudes, if there had been any, were sustained or lost over a period of time.

IV. IMPLICATIONS

As pointed out in Chapter I, the social work profession has infrequently dealt directly with the issue of influence (persuasion) as it is related to attitude change. The researchers of the research project believe that this is unfortunate, since social work directly involves the process of communication.

It has been indicated that social workers are concerned with the effects they are having upon those individuals with whom they work. Implications for the profession of social work not only point to the direct influence social workers may have upon their clients through direct casework methods, but also to the indirect influence. For

example, the effectiveness of the social worker depends not only upon "what is said" or "how it is said," but, as pointed out in Chapter I, it also depends upon "who says it" (authority). However, in this study it was shown that authority did not have a significant effect on producing attitude change. Thus, authority as it relates to the effectiveness of the social worker remains unanswered.

It was found that several variables (length of presentation, etc.) may have affected the outcome of this study. Thus, professionals in the field of social work must become more aware of the variables that may be affecting their clients. There may be many variables that affect social work intervention that have yet to be explored.

V. NEED FOR FURTHER RESEARCH

The findings of this research project are not conclusive; additional research is needed. It is believed that the research design utilized in this study was solid and based on past work that has been done in the field of attitude change, and several of the weak areas in this study have been pointed out to be refined even further (length of presentation, speech). Additional research is needed to determine if the authority of the communicator (source) does make a difference in the attitude change of the receiver.

The research represented in this study has made a contribution to the field of social work by pointing out

areas of difficulty in actually determining the attitudes of individuals regarding any given piece of information that may be given to them (in the social work profession, the exchange of information is often between the client and the social worker).

The task undertaken in this research was to assess the effect authority has on changing the attitudes of students. As the findings presented in this study are not conclusive, a great deal of work is left to be done. What effect authority does have on producing attitude change remains in question.

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APPENDIX A

TEACHER'S INSTRUCTIONS TO STUDENTS FIRST DAY OF EXPERIMENT

Today, we have a questionnaire that we would like you to fill out. The questions are a part of a study concerning high school sophomores and what they know about alcohol use. Your names are asked on the forms only as a way of correlating the material.

On Personal Information Sheet:

Question #5 - please list the organizations you are a member of; do not mark in spaces.

APPENDIX B

ALCOHOL ATTITUDE QUESTIONNAIRE

Name _____
last first middle

The following questions are to be completed as quickly as possible. Do not skip any questions but answer each one. Work quickly, do not leave any questions unanswered, return to any to check your answers. If you must guess to answer, do so. When you are finished turn your paper over.

True False

_____	_____	1. During the prohibition era excessive drinking was principally regarded as a moral issue.
_____	_____	2. Most of the diseases of alcoholism are caused by improper diet and hygiene.
_____	_____	3. The temperate use of alcohol, provided a normal diet is maintained, cannot produce disease.
_____	_____	4. Natural fermentation of the sugars of fruits is the process of making wine.
_____	_____	5. Whiskey containing 80% alcohol is described as being 80 proof.
_____	_____	6. Members of Alcoholics Anonymous admit they cannot control their drinking of alcohol.
_____	_____	7. Children of alcoholics seem more likely to become alcoholics themselves than do children of moderate drinkers.
_____	_____	8. One-fifth to one-third of all alcoholics in the United States are women.
_____	_____	9. Authorities estimate that there are 700,000 female alcoholics in the United States today.

True False

_____	_____	10.	If individuals who drink excessively are punished they may still become alcoholics.
_____	_____	11.	A drink taken with food has less effect than one taken on an empty stomach.
_____	_____	12.	Natural fermentation processes, if allowed to continue to completion, produce a beverage of less than 30% alcohol.
_____	_____	13.	Drunkenness on the part of an individual clearly shows that he is addicted to alcohol.
_____	_____	14.	The individual, at the beginning stages of alcoholism, looks just about like the other neurotic people in his crowd.
_____	_____	15.	Prohibition has, on many occasions, been given up after a trial.
_____	_____	16.	Nationwide prohibition in the United States became law with the passage of the 16th amendment.
_____	_____	17.	Distilled spirits did not make their appearance in Europe until the 15th century.
_____	_____	18.	All churches condemn drunkenness but not all require their members to be abstainers.
_____	_____	19.	The membership of Alcoholics Anonymous is restricted to those who cannot otherwise afford treatment.
_____	_____	20.	An individual who has been taking the drug, Antabuse, is able to drink moderately.
_____	_____	21.	The individual who has "lost control" with regard to his drinking is likely to become an extravagant spender.
_____	_____	22.	Antabuse is a drug which a wife could use to help cure her husband's drinking without his being aware of it.
_____	_____	23.	The everyday use of alcoholic beverages was accepted in early America.
_____	_____	24.	The drug, Antabuse, is habit forming just as is morphine.

True . False

_____	_____	25. Alcoholics Anonymous is a reformer's group.
_____	_____	26. Almost all vegetable substances are sources of alcohol.
_____	_____	27. Children of moderate drinkers have mental disorders more often than do children of abstainers.
_____	_____	28. The original purpose in taxing alcoholic beverages was to limit their use.
_____	_____	29. Public law regards excessive drinking as an illness rather than an illegal act.
_____	_____	30. Dictionary definitions of alcoholism imply that alcoholism is the direct result of the use of alcohol.
_____	_____	31. Locking up the liquor supply is an effective way of treating the alcoholic.
_____	_____	32. There are a number of very effective hang-over cures.
_____	_____	33. Taxing of alcoholic beverages in the United States is looked upon today only as a means of gaining tax revenue and not as a means of limiting usage.
_____	_____	34. People with low incomes tend to drink more than those of the middle income group.
_____	_____	35. There are fewer alcoholics among those who stick to beer and wine than there are among those who drink hard liquor.
_____	_____	36. As two people progress toward extreme drunkenness, their behavior tends to become more and more alike.
_____	_____	37. Alcohol, even in small amounts, relieves tension and allows one to forget unpleasant things.
_____	_____	38. Whiskey is aged to increase its alcoholic content.
_____	_____	39. Churches which require temperance of their members consider any consumption of alcoholic beverages sinful.

True False

- _____ 40. Alcohol acts as a typical narcotic.
- _____ 41. When an individual who has been taking the drug, Antabuse, drinks even a small amount of alcohol he becomes violently ill.
- _____ 42. Alcohol is described medically as a stimulant.
- _____ 43. A person who drinks a pint of whiskey a day receives less than one-fourth of his daily calory needs.
- _____ 44. Wines are fortified by adding additional alcohol after fermentation is stopped.
- _____ 45. In the 1850's, prohibition laws were adopted in 13 states.
- _____ 46. Alcoholics Anonymous believes that once a person becomes an alcoholic, he will always remain an alcoholic.
- _____ 47. Most alcoholics like the taste of liquor.
- _____ 48. Most alcoholics hate themselves for their lack of ability to stop drinking.
- _____ 49. By 1863, only one state still had a prohibition law.
- _____ 50. Alcohol relieves tension and relaxes the individual just as other sedatives do.
- _____ 51. The original purpose of taxing alcoholic beverages was to gain revenue and only incidentally to limit consumption.
- _____ 52. Alcoholics Anonymous actively recruits members.
- _____ 53. "Beer heart" is caused by the action of excess alcohol on the heart muscle.
- _____ 54. Experts have noted that the tendency of lower-middle class people to abstain from drinking is often to distinguish themselves from the lowest social class.
- _____ 55. Most drinking among high school students is of beer and wine.

True False

_____	_____	56. Vomiting following the intake of a great deal of alcohol is caused primarily by the continuous odor present.
_____	_____	57. One of the principle reasons for drinking alcoholic beverages in Europe during the middle ages was the lack of safe drinking water.
_____	_____	58. A large person requires about the same amount of alcohol to become "tight" as does a small person.
_____	_____	59. Sufficient alcohol to reduce a person's unpleasant feelings will also eliminate all of his other feelings.
_____	_____	60. Alcoholics Anonymous believes that the alcoholic must become a total abstainer.
_____	_____	61. Small amounts of alcohol usually reduce one's ability to make judgment, particularly about himself.
_____	_____	62. The tendency to become an alcoholic is apparently inherited.
_____	_____	63. Withholding money from the alcoholic is usually helpful in curing him.
_____	_____	64. Brain wave patterns of alcoholics are somewhat different from those of non-alcoholics.
_____	_____	65. Individuals who have traveling jobs become alcoholic more often than those who have jobs which allow them to live at home.
_____	_____	66. About 50% of the alcoholics in the United States are women.
_____	_____	67. Most alcoholics appear for treatment only after some physical or psychological crisis has occurred.
_____	_____	68. Alcohol affects physical skills before it affects mental abilities of the drinker.
_____	_____	69. Native white Americans show a relatively low rate of alcoholism.
_____	_____	70. A limited amount of alcohol before eating will act as a mild stimulant to the stomach

True False

and hence to the appetite.

_____	_____	71. Going "on the wagon" is necessary to the rehabilitation of the alcoholic.
_____	_____	72. Most alcoholics appear for treatment only when the illness is in an advanced stage.
_____	_____	73. Alcoholism is a disease which gets progressively worse.
_____	_____	74. There are very few Jewish people who are alcoholics.
_____	_____	75. Liquors are produced by distilling naturally fermented drinks to obtain a high percentage of alcohol.
_____	_____	76. In the early stages of alcoholism the individual can control the amount he drinks on any occasion.
_____	_____	77. When the individual goes from social drinking to alcoholism, one can clearly see the change in that person.
_____	_____	78. Mass drunkenness in religious observances is found in many private societies.
_____	_____	79. Alcoholism is as common in rural areas as it is in cities.
_____	_____	80. In preparing beer, the fermentation process is stopped before it is complete.
_____	_____	81. In the so-called conditioned response method of treatment, a drug which produces vomiting is given along with some alcoholic beverage.
_____	_____	82. Alcoholics Anonymous emphasizes that the alcoholic must refuse even the smallest amounts of alcohol in any form other than medical.
_____	_____	83. Poles show a very low rate of alcoholism.
_____	_____	84. Less than one-fourth of the money spent for alcoholic beverages goes to the government for taxes.
_____	_____	85. In the early days of our country, a person was fined or jailed for drunkenness.
_____	_____	86. Alcohol has no real effect on a person's

True False

feelings of shame and remorse.

- _____ 87. In all societies in the world where alcoholic beverages are known, drinking accompanies holiday activities.

APPENDIX C

PERSONAL INFORMATION

A. Personal Data:

1. Initials _____
2. Age _____ Month _____ Year _____
3. Sex: Male _____ Female _____
4. How many school organizations in the last school you attended were you a member of _____ (clubs, church groups, etc.) ?
5. Of the organizations above, how many were primarily:
_____ social
_____ professional
_____ hobby
_____ religious
_____ social action
_____ service
_____ political
_____ other (explain)
6. In which of the above organizations were you the most active ? _____
7. What is your religious preference?
_____ Protestant
_____ Catholic
_____ Jewish
_____ Other (specify)
8. How often do you attend religious meetings?

- ☐ regularly (weekly)
☐ occasionally (less than weekly)
☐ seldom (holidays or special occasions)
☐ never

9. What occupation are you preparing yourself for? _____

10. What are your immediate plans after finishing high school ?

- ☐ work
☐ technical or vocational school
☐ college
☐ military
☐ other (specify)

11. The grades I get are mostly

- ☐ A and B
☐ C
☐ D and F

12. Have you attended any school outside of the Salem area ?

- ☐ yes
☐ no

13. Give the state and city (town) where you were born

_____ city
_____ state

B. Family Data:

1. Age of your

_____ father

_____ mother

2. Do you have any brothers or sisters?

_____ yes

_____ no

3. What is the highest level of education completed by

_____ father

_____ mother (give by numbers, i.e., one year of college = 13)

4. What is your father's usual or most frequent occupation?

_____ (if deceased or retired, give last occupation)

5. What is your mother's usual or most frequent occupation?

6. Political preference of your father

_____ Democrat

_____ Republican

_____ Other (specify)

7. Give political preference of your mother

_____ Democrat

_____ Republican

_____ Other (specify)

8. What is your father's approximate income?

_____ \$ 0 - \$ 3,999 per year

_____ \$ 4,000 - \$ 7,999 per year

_____ \$ 8,000 - \$11,999 per year

_____ \$12,000 + per year

9. In the last five years, how many city to city moves
has your family made _____
10. In the last five years, how many moves within the
same city has your family made _____

APPENDIX D

TEACHER'S INSTRUCTIONS TO STUDENTS SECOND DAY OF EXPERIMENT (PRETEST, PHYSICIAN, POSTTEST EXPERIMENTAL CONDITION)

Teacher says to students:

I'm sure you have noticed that today, some of you are in different classes than you were last week when you were given the Alcohol Knowledge Questionnaire; we have regrouped you according to the scores you received. Let me reassure you that everyone scored very highly on the questionnaire, and I am very pleased with the results. The classroom arrangements for today are only temporary and you will be returning to your regular classes tomorrow.

1. Today, I have another questionnaire I would like to have you fill out. (Give them ten minutes to complete them).
2. Now, I would like to introduce our guest speaker for today. This is (Dr. Adams) who is a practicing physician in the Portland area. He will speak to you today on the topic of alcoholism. Please do not ask any questions or make comments during the speech. Time has been provided at the end of the period for this purpose. (Step #2 should take about fifteen minutes).
3. Before our question and answer period, I would like to have you complete a final questionnaire. (Give them ten minutes).
4. Question and answer period.

APPENDIX E

TEACHER'S INSTRUCTIONS TO STUDENTS SECOND DAY OF EXPERIMENT (NO PRETEST, CONTROL GROUP, POSTTEST EXPERIMENTAL CONDITION)

Teacher says to students:

I'm sure you have noticed that today, some of you are in different classes than you were last week when you were given the Alcohol Knowledge Questionnaire; Let me reassure you that everyone scored very highly on the questionnaire, and I am very pleased with the results. The classroom arrangements for today are only temporary and you will be returning to your regular classes tomorrow.

1. Today, I would like you to spend the next twenty-five minutes or so studying on your own. Please do not ask any questions or make comments about questionnaires you were asked to fill out last week or about the classroom arrangements for today. Time has been provided at the end of the period for this purpose. (Give them twenty-five minutes to study).
2. Now, before our question and answer period, I would like to have you complete a final questionnaire. (Give them ten minutes).
3. Question and answer period.

APPENDIX F

TEACHER'S INSTRUCTIONS TO STUDENTS SECOND DAY OF EXPERIMENT (NO PRETEST, SOCIAL WORKER, POSTTEST EXPERIMENTAL CONDITION)

Teacher says to students:

I'm sure you have noticed that today, some of you are in different classes than you were last week when you were given the Alcohol Knowledge Questionnaire; we have regrouped you according to the scores you received. Let me reassure you that everyone scored very highly on the questionnaire, and I am very pleased with the results. The classroom arrangements for today are only temporary and you will be returning to your regular classes tomorrow.

1. Today, I would like you to spend the next ten minutes or so studying on your own. (Give them ten minutes to study).
2. Now, I would like to introduce our guest speaker for today. This is Mr. Adams, who is a professional social worker, working with alcoholics in the Portland area. He will speak to you today on the topic of alcoholism. Please do not ask any questions or make comments during the speech. Time has been provided at the end of the period for this purpose.
(Step #2 should take about fifteen minutes).
3. Before our question and answer period, I would like to have you complete a final questionnaire. (Give them ten minutes).
4. Question and answer period.

APPENDIX G

TEACHER'S INSTRUCTIONS TO STUDENTS SECOND DAY OF EXPERIMENT (NO PRETEST, PHYSICIAN, POSTTEST EXPERIMENT CONDITION)

Teacher says to students:

I'm sure you have noticed that today, some of you are in different classes than you were last week when you were given the Alcohol Knowledge Questionnaire; we have regrouped you according to the scores you received. Let me reassure you that everyone scored very highly on the questionnaire, and I am very pleased with the results. The classroom arrangements for today are only temporary and you will be returning to your regular classes tomorrow.

1. Today, I would like you to spend the next ten minutes or so studying on your own. (Give them ten minutes to study).
2. Now, I would like to introduce our guest speaker for today. This is Dr. Adams who is a practicing physician in the Portland area. He will speak to you today on the topic of alcoholism. Please do not ask any questions or make comments during the speech. Time has been provided at the end of the period for this purpose. (Step #2 should take about fifteen minutes).
3. Before our question and answer period, I would like to have you complete a final questionnaire. (Give them ten minutes).
4. Question and answer period.

APPENDIX H

TEACHER'S INSTRUCTIONS TO STUDENTS SECOND DAY OF EXPERIMENT (PRETEST, CONTROL, POSTTEST EXPERIMENT CONDITION)

Teacher says to students:

I'm sure you noticed that today, some of you are in different classes than you were last week when you were given the Alcohol Knowledge Questionnaire; we have regrouped you according to the scores you received. Let me reassure you that everyone scored very highly on the questionnaire, and I am very pleased with the results. The classroom arrangements for today are only temporary and you will be returning to your regular classes tomorrow.

1. Today, I have another questionnaire I would like to have you fill out. (Give them ten minutes to complete them).
2. Now, I would like you to spend the next fifteen minutes or so studying on your own. (Give them fifteen minutes to study). Also, tell them not to ask any questions or make any comments about the questionnaires they have been asked to fill out. Time has been provided at the end of the period to answer any questions you may have.
3. Before our question and answer period, I would like to have you complete a final questionnaire. (Give them ten minutes).
4. Question and answer period.

APPENDIX I

TEACHER'S INSTRUCTIONS TO STUDENTS SECOND DAY OF EXPERIMENT (PRETEST, SOCIAL WORKER, POSTTEST EXPERIMENT CONDITION)

Teacher says to students:

I'm sure you have noticed that today, some of you are in different classes than you were last week when you were given the Alcohol Knowledge Questionnaire; we have regrouped you according to the scores you received. Let me reassure you that everyone scored very highly on the questionnaire, and I am very pleased with the results. The classroom arrangements for today are only temporary and you will be returning to your regular classes tomorrow.

1. Today, I have another questionnaire I would like to have you fill out. (Give them ten minutes to complete them).
2. Now, I would like to introduce our guest speaker for today. This is Mr. Adams, who is a professional social worker, who works with alcoholics in the Portland area. He will speak to you today on the topic of alcoholism. Please do not ask any questions or make comments during the speech. Time has been provided at the end of the period for this purpose. (Step #2 should take about fifteen minutes).
3. Before our question and answer period, I would like to have you complete a final questionnaire. (Give them ten minutes).
4. Question and answer period.

APPENDIX J

PRETEST

Name _____
 last first middle

A number of statements concerning alcohol and its use are listed below. Please indicate your agreement or disagreement with each statement by encircling the word to the left of each statement which best describes your feeling. Make a decision for every statement. Encircle only one word for each statement.

AGREE	DISAGREE	1.	Alcoholics Anonymous is a wondrous organization.
AGREE	DISAGREE	2.	The families of alcoholics should encourage them to seek expert treatment for their condition.
AGREE	DISAGREE	3.	Private treatment facilities should be available to alcoholics.
AGREE	DISAGREE	4.	Treatment of alcoholism should be a specialty within the medical profession.
AGREE	DISAGREE	5.	Tremendous research programs are needed in the area of alcoholism.
AGREE	DISAGREE	6.	Grants should be readily available to any professional person for research in the area of alcoholism.
AGREE	DISAGREE	7.	Doctors who spend their time treating alcoholics are wasting their time.
AGREE	DISAGREE	8.	Neither state nor federal funds should be used for the treatment of alcoholism.
AGREE	DISAGREE	9.	General hospitals should not accept alcoholics for treatment as such.
AGREE	DISAGREE	10.	If an alcoholic wanted to be cured, he could accomplish the matter himself.

AGREE	DISAGREE	11.	Even if alcoholics could be cured by proper treatment, the cost would be unwarranted.
AGREE	DISAGREE	12.	The physician who attempts to treat an alcoholic is wasting his time.
AGREE	DISAGREE	13.	Newspapers should be willing to contribute space for publicizing the problem of alcoholism.
AGREE	DISAGREE	14.	The facts of alcoholism should be extensively taught in every high school in America.
AGREE	DISAGREE	15.	Popular literature on alcoholism should be available to any citizen who has the interest to write for it.
AGREE	DISAGREE	16.	Every dollar spent toward educating the public regarding alcoholism is a dollar exceptionally well spent.
AGREE	DISAGREE	17.	The more extensive efforts to "educate the public" regarding alcoholism probably serves simply to increase alcoholism.
AGREE	DISAGREE	18.	The facts of alcoholism are generally unknown to the public.
AGREE	DISAGREE	19.	Public education concerning alcoholism is a waste of time and money.
AGREE	DISAGREE	20.	The general public is already sufficiently informed about the facts of alcoholism.
AGREE	DISAGREE	21.	Publicity concerning the problem of alcoholism simply adds to the confusion already rampant in the public mind.
AGREE	DISAGREE	22.	The public has heard enough about alcoholism.
AGREE	DISAGREE	23.	Only such professional persons as physicians, social workers, and the like, should receive extensive information concerning alcoholism.
AGREE	DISAGREE	24.	More interest in the problem of alcoholism should be aroused among the general public.

AGREE	DISAGREE	25.	Legal control of alcohol should be on a purely local option basis.
AGREE	DISAGREE	26.	Control of alcoholic beverages should be limited to that necessary to prevent drunkenness and evils of excess.
AGREE	DISAGREE	27.	The present system of county option regarding the sale of alcohol is the most practical and desirable one available.
AGREE	DISAGREE	28.	State liquor stores should be conveniently accessible to any citizen within the state.
AGREE	DISAGREE	29.	There should be no legal restrictions on the sale and distribution of alcoholic beverages.
AGREE	DISAGREE	30.	Those who disagree with the concept of prohibition should feel free to drink even in "dry" areas.
AGREE	DISAGREE	31.	Liquor and groceries should be taxed proportionately.
AGREE	DISAGREE	32.	The government should have no right to control in any way the accessibility of alcoholic beverages to adult citizens.
AGREE	DISAGREE	33.	The sale of alcoholic beverages should be more closely supervised and controlled by the government.
AGREE	DISAGREE	34.	Closer supervision of the sale of alcoholic beverages might well result in less crime, particularly among juveniles.
AGREE	DISAGREE	35.	Alcoholic beverages should be sold on Sundays and holidays.
AGREE	DISAGREE	36.	The most important goal in alcohol education is to suppress drinking behavior.
AGREE	DISAGREE	37.	A person who has had the equivalent of one highball should not be allowed to drive an automobile.
AGREE	DISAGREE	38.	Despite the fact that many millions do use alcoholic beverages, their use is degrading.

AGREE	DISAGREE	39.	An individual with no emotional problem has no need for alcohol.
AGREE	DISAGREE	40.	The "social drinker" is probably basically disturbed emotionally.
AGREE	DISAGREE	41.	Alcoholic beverages are harmless when used in moderation.
AGREE	DISAGREE	42.	The use of alcohol is a custom which should be abandoned by society.
AGREE	DISAGREE	43.	It is all right for women to engage in moderate social drinking.
AGREE	DISAGREE	44.	Drinking of alcoholic beverages should be classed with the illegal use of dope.
AGREE	DISAGREE	45.	The habit of a before-dinner cocktail is neither beneficial nor harmful.
AGREE	DISAGREE	46.	Social drinking is all right if, and only if, it is done with moderation.
AGREE	DISAGREE	47.	One should drink if he enjoys the taste of alcoholic beverages.
AGREE	DISAGREE	48.	Drinking on some social occasions should be done if it helps the individual to fit in with others.
AGREE	DISAGREE	49.	The alcoholic is basically an insecure person.
AGREE	DISAGREE	50.	Alcoholism is the direct result of a sick and decadent society.
AGREE	DISAGREE	51.	Conditions within the individual as well as external to the individual contribute to the development of alcoholism.
AGREE	DISAGREE	52.	No one should presume to criticize the alcoholic without knowing why he drinks.
AGREE	DISAGREE	53.	Alcoholism should be treated as a misdemeanor.
AGREE	DISAGREE	54.	In combating alcoholism as a disease, the effort should be as great as the effort expended in combating any other disease.

- AGREE DISAGREE 55. Only a person who is basically quite malicious could become alcoholic.
- AGREE DISAGREE 56. The alcoholic has no one to blame for his troubles but himself.
- AGREE DISAGREE 57. Alcoholism begins as the sin of drinking and ends as a sinful habit.
- AGREE DISAGREE 58. Alcoholism should be treated as a felony.
- AGREE DISAGREE 59. The alcoholic suffers from a severe illness and needs treatment to a much greater degree than the usual medical complaints.
- AGREE DISAGREE 60. All alcoholics are human wrecks found in dives.

APPENDIX K

SPEECH GIVEN BY ACTOR IN EXPERIMENTAL CONDITIONS, " THE DETRIMENTAL EFFECTS OF ALCOHOL "

Alcohol in any quantity produces a depressing, not a stimulating, action on the central nervous system. When alcohol is ingested and enters the blood stream, the functions of the forebrain are affected first. Judgement is generally impaired, caution is reduced, self-control is lessened, reason is blunted, will power and attention are depressed, the special senses are dulled, and inhibitions begin to be removed.

Small amounts of alcohol do not interfere with digestion, they may even promote it; large amounts slow or stop it. Alcohol is popularly believed to be a respiratory and circulatory stimulant, but this is not true. In addition, statistics show a higher death rate among persons who use alcohol excessively.

The alcoholic, interested only in a life with alcohol, usually follows a pattern of daily living which weakens the disease-resisting power of the body. Statistics show that chronic alcoholics have a higher mortality from pneumonia than moderate drinkers or abstainers and acquire the infection more frequently.

Alcohol has none of the vitamins and minerals and proteins the body needs. An excessive drinker usually neglects food, deriving up to 70% of his needed calories from alcohol, and is apt to be more interested in drinking than eating.

The excessive drinker may develop diseases stemming from a lack of vitamins. There is no scientific evidence at present to verify that physical tolerance is built up for alcohol. For both regular drinkers and non-drinkers, when the alcohol concentration in the blood reaches a certain point, unconsciousness follows.

Children who grow up in alcoholic families inevitably learn different attitudes toward life and alcohol than do children in normal homes. If more of them become alcoholics than do people in general, this is due to their experiences and not to heredity. A person from an alcoholic family probably runs a greater risk of alcoholism if he drinks.

The anesthetic effect of alcohol in those portions of the brain which control behavior causes the drinker to become less aware of the need for control, and less conscious of the forces which assist in imposing those controls. Under the influence of alcohol, the individual may become more primitive in behavior as the basic impulses are released from the acquired controls. The general effect is characterized by a regression from maturity to immaturity and from civilized to uncivilized behavior.

The various stages of intoxication are determined by the increasing concentration of alcohol in the blood. The degree to which normal performances are impaired is in direct proportion to the stage of intoxication. One of the early signs of intoxication is when the drinker, because of the effect of alcohol, is unable to recognize his anti-

social behavior. Loud, boisterous conduct exemplifies such a person. In the second stage, the sense of perception is dulled and the field of observation is narrowed. Clumsiness takes the place of precision due to weak muscular coordination and results in mishaps and loss of efficiency. In the third stage, the control of locomotion and muscular movements is seriously disturbed and the ordinary symptoms of drunkenness are manifested. Finally, in the fourth and last stage, the results are stupor, unconsciousness, and coma.

Social pressures often cause social drinking. Having friends, being liked and accepted by the group is important to everyone, young and old, and often one is made to feel that he must drink to be a good sport or to keep from offending someone.

In summary, it would appear that many people who try to resolve their thoughts and actions on the subject are deluged with all sorts of fallacious materials and ideas. The following factual statements should help clear up misunderstandings in this area:

1. Alcohol enters the blood stream at a rapid rate and acts upon the brain and central nervous system, slowing down the reaction time, perception and reflexes.

2. Alcohol is an anesthetic which provides temporary, quick relief from many painful physical and psychological conditions by dulling perception. The release of tensions due to anxiety is chiefly through the anesthetic action of alcohol on higher centers of the brain.

3. Small amounts of alcohol may increase appetite by increasing the flow of saliva and gastric juices. In large quantities, alcohol interferes with or stops digestion.

4. Alcohol provides calories, but it delivers no vitamins, minerals or proteins and may impede their absorption.

5. Alcohol does not increase efficiency or ability to perform mental or physical work of any sort.

6. Alcohol does not act as a stimulant, although, by reducing inhibitions or consciousness of fatigue, it seems to stimulate.

7. Alcohol has not been proven to be a direct (or specific) cause of peptic ulcer, though it can aggravate this condition.

8. Alcohol does not cure colds. It may promote perspiration and relief from discomfort which may aid recovery if the patient stays in bed. Heavy drinkers, whose resistance is lowered by poor habits generally, are more susceptible to death from pneumonia than others.

9. Alcohol does not differ in its effect according to the form of beverage in which it is incorporated; the chief factor is the amount of alcohol present in different beverages.

APPENDIX L

POSTTEST

Name _____
 last first middle

A number of statements concerning alcohol and its use are listed below. Please indicate your agreement or disagreement with each statement by encircling the word, to the left of each statement, which best describes your feeling. Make a decision for every statement. Encircle only one word for each statement.

AGREE	DISAGREE	1.	A national organization similar to the Cancer Society should be established and supported for treatment of alcoholism.
AGREE	DISAGREE	2.	Oregon should establish more treatment facilities for alcoholics.
AGREE	DISAGREE	3.	For successful treatment of alcoholism both medical and psychological techniques should be used.
AGREE	DISAGREE	4.	The most successful treatment of alcoholism attempts to help the individual regain his will power.
AGREE	DISAGREE	5.	The Division of Alcoholism is a waste of the taxpayer's money.
AGREE	DISAGREE	6.	Money spent for research on alcoholism would be better spent on other things.
AGREE	DISAGREE	7.	Individual psychological counseling is the most effective way for treating the alcoholic.
AGREE	DISAGREE	8.	The Division for Alcoholism is an organization of vital importance to all.
AGREE	DISAGREE	9.	Science has no real hope of finding a cure for alcoholism.

AGREE	DISAGREE	10.	The wholesale treatment of alcoholics is impractical.
AGREE	DISAGREE	11.	It is impractical to offer treatment to all alcoholics who might want it.
AGREE	DISAGREE	12.	The treatment of alcoholism should be undertaken only by the individual's own family and friends.
AGREE	DISAGREE	13.	Public education is an integral part of the treatment of alcoholism as a social problem.
AGREE	DISAGREE	14.	Alcoholism should be as widely and as freely discussed among the general public as cancer or heart disease.
AGREE	DISAGREE	15.	Cooperative community effort is needed to provide the facts about alcohol.
AGREE	DISAGREE	16.	Public education programs concerning alcoholism are useless.
AGREE	DISAGREE	17.	It is impractical to attempt to educate the public concerning the facts of alcoholism.
AGREE	DISAGREE	18.	There is no real need for a specific educational program on alcoholism in Oregon.
AGREE	DISAGREE	19.	The public could do with less emphasis on the problem of alcoholism.
AGREE	DISAGREE	20.	Literature concerning alcoholism should not be freely available to the general public.
AGREE	DISAGREE	21.	More information should be available to the general public regarding alcoholism.
AGREE	DISAGREE	22.	Information concerning alcoholism should be restricted to those directly involved.
AGREE	DISAGREE	23.	The public deserves to be kept informed regarding the topic of alcoholism.
AGREE	DISAGREE	24.	The Division of Alcoholism should distribute more information among the general public.

AGREE	DISAGREE	25.	If the federal government refuses to enforce prohibition, it is up to the individual states.
AGREE	DISAGREE	26.	Manufacture of alcohol should be restricted even though we have an excess of cereal grains available.
AGREE	DISAGREE	27.	The law has no more right to restrict the sale of alcohol than it does the sale of bread.
AGREE	DISAGREE	28.	The present system involving state liquor stores is quite satisfactory.
AGREE	DISAGREE	29.	The heavy tax on liquor is unfair.
AGREE	DISAGREE	30.	Alcoholic beverages should be as freely available as cigarettes.
AGREE	DISAGREE	31.	Alcohol should be freely available to anyone over 18 years of age.
AGREE	DISAGREE	32.	Any business should be able to acquire a liquor license at nominal cost.
AGREE	DISAGREE	33.	The costs of liquor licenses should be decreased.
AGREE	DISAGREE	34.	Alcohol is much too freely available to adolescents.
AGREE	DISAGREE	35.	The cost of liquor licenses should be increased.
AGREE	DISAGREE	36.	Enforcement of liquor licenses should be increased.
AGREE	DISAGREE	37.	Drinking is OK as a business courtesy.
AGREE	DISAGREE	38.	Drinking is, itself, as bad as any improper behavior which may result.
AGREE	DISAGREE	39.	Public drinking is more to be frowned upon than drinking in the home.
AGREE	DISAGREE	40.	Taking a cocktail before dinner is the first step toward alcoholism.
AGREE	DISAGREE	41.	Parents who drink in front of their children would do better to flog them.

AGREE	DISAGREE	42.	Social drinking adds to our relaxation and pleasure.
AGREE	DISAGREE	43.	Moderate drinking should be regarded as neither good nor evil.
AGREE	DISAGREE	44.	Whether or not a person drinks has nothing to do with his will power or emotional health.
AGREE	DISAGREE	45.	Even moderate drinking eventually produces harmful consequences.
AGREE	DISAGREE	46.	Alcohol in moderation has no real effect upon a person's personality.
AGREE	DISAGREE	47.	A few drinks are quite relaxing after a hard day's work.
AGREE	DISAGREE	48.	A job applicant who drinks at all is probably a bad prospect.
AGREE	DISAGREE	49.	The alcoholic deserves the same consideration as any other sick person.
AGREE	DISAGREE	50.	The alcoholic has only himself to blame for his problems.
AGREE	DISAGREE	51.	The alcoholic is simply a sick person who needs care and sympathy.
AGREE	DISAGREE	52.	Alcoholism can only exist in a general atmosphere of greed.
AGREE	DISAGREE	53.	The alcoholic is more to be envied than pitied.
AGREE	DISAGREE	54.	Alcoholism is a disease and should be treated as such.
AGREE	DISAGREE	55.	Alcoholism is a condition which is best ignored.
AGREE	DISAGREE	56.	The alcoholic basically enjoys the attention which he usually gets.
AGREE	DISAGREE	57.	Only an exceedingly selfish and unthinking person becomes an alcoholic.
AGREE	DISAGREE	58.	Alcoholism is a deliberate crime against society.

- AGREE DISAGREE 59. Most alcoholics would resent an offer
of free treatment for their condition.
- AGREE DISAGREE 60. The alcoholic should be treated as the
criminal which he is.

APPENDIX M

PERSONAL INFORMATION

Total N=168

AGE

Years	14	15	16
Number	21	113	22
Percent	13.5	72.4	14.1

N=156

SEX

Gender	Male	Female
Number	85	83
Percent	51.0	49.0

N=168

NUMBER OF ORGANIZATIONS ATTENDED

Number of Organizations	0	1	2	3	4
Number of Responses	55	35	26	24	23
Percent	33.7	21.5	16.0	14.7	14.1

N=163

TYPES OF ORGANIZATIONS

Type	Social	Professional	Hobby	Religious
Response	66	2	43	35
Active In	34	1	15	11

TYPES OF ORGANIZATIONS, continued

Type	Social Activity	Service	Political	Other
Response	10	22	25	0
Active In	3	9	1	0

RELIGIOUS PREFERENCE

Religion	Protestant	Catholic	Jewish	Other
Num. of resp.	99	31	3	26
Percent	62.3	19.5	1.9	16.4

N=159

ATTENDANCE AT CHURCH

Attendance	Regular	Occasional	Seldom	Never
Frequency	67	28	39	33
Percent	40.1	16.8	23.4	19.8

N=167

TYPES OF OCCUPATIONS PREPARING FOR

Type	White Collar	Blue Collar	Prof.	Undecided
Num. resp.	71	16	37	21
Percent	49.0	11.0	25.5	14.5

N=145

IMMEDIATE PLANS AFTER HIGH SCHOOL

Plans	Work	Tech./Voc. School	College	Military	Oth.
Number	29	33	90	20	7
Percent	17.2	13.6	53.3	11.8	4.1

N=168

GRADES EARNED

Grades	A-B	C	D-F
Number	69	95	4
Percent	41.1	56.6	2.4

N=168

ATTENDANCE OF SCHOOL OUTSIDE SALEM AREA

	Yes	No
Number	87	79
Percent	52.4	47.6

N=166

AREA OF BIRTH

Area	Salem	Western States	Midwest	Eastern	Foreign
Number	68	75	9	6	2
Percent	42.5	46.9	5.6	3.8	1.3

N=160

PARENTS AGE

Age	30-34	35-39	40-44	45-49	50-54	+
Father	7	31	38	30	20	14
% Response	5.0	22.1	27.1	21.4	14.3	10.0
Mother	17	40	39	39	13	6
% Response	11.0	26.0	25.3	25.3	8.4	3.9

N=140 (Father)
N=154 (Mother)

SIBLINGS

	Yes	No
Number	162	5
Percent	97.0	3.0

N=167

PARENTS EDUCATION

Years	0-8	9-12	13-16	17+
Father	21	74	38	10
% Response	14.7	51.8	26.6	7.0
Mother	11	95	37	3
% Response	7.5	65.1	25.3	2.1

N=146 (Father)

N= 80 (Mother)

POLITICAL PREFERENCE

Party	Democrat	Republican	Other
Father	69	56	8
% Response	51.9	42.1	6.0
Mother	62	66	10
% Response	45.0	47.8	7.2

N=133 (Father)

N=138 (Mother)

FATHERS INCOME

Income	\$0-\$3,999	\$4,000-7,999	\$8,000-11,999	\$12,000+
Number	8	40	45	23
Percent	6.9	34.5	38.8	19.8

N=116

FAMILY MOVES

Moves	0	1	2	3+
City to city	114	19	11	15
Percent	71.7	12.0	7.0	9.4
Within city	108	22	12	22
Percent	65.9	13.4	7.3	13.4

N=159 (City to city)

N=164 (Within city)

APPENDIX N

THE STUDENT POPULATION

As the experiment was conducted on two different days, the experimenters expected some attrition of students due to sickness and other normal causes of absences. The experimenters were also prepared for an addition of students on the second experimental day who had not been present at school on the first experimental day. In each of the questionnaires that the students were asked to fill out, space was provided for either their full name or their initials. Thus, it was possible to accurately match forms and to cross check from one form to the next. As previously mentioned, the students were told that the names on the form would be used only for matching purposes, and would not in any way affect their grades.

A total of 169 knowledge questionnaires were collected, but the personal information sheet administered on the same day reflected a drop of one student. On the second day of the experiment, only the posttest was administered to all of the students and the total number collected was 152. Each student's alcohol knowledge questionnaire from the first and second experimental days was then matched so that comparisons could be made concerning attitude change toward alcohol usage. This, plus the fact that several students had to be eliminated because they failed to properly identify their questionnaires with either their initials or their entire names, left a total of 140 students for consideration in the final tabu-

lation of the data. The breakdown into experimental conditions is illustrated in Table I of Chapter III.

The unequal number of students in each condition reflects, first, the size difference of the two periods. Third period had a total of 73 students; fourth period had a total of 67 students that were included in the final experimental condition. The other reason for the different number of students in each experimental condition is that the students were assigned to conditions based on the scores they received on the knowledge questionnaires which were administered on the first day of the experiment. Thus, the experimenters had no control over the attrition of students and shifts made due to student absences.

The scores obtained from the alcohol knowledge questionnaires were used to assign students to the six various experimental conditions. The spread of the scores (which were based on the number of incorrect answers out of a total of 87) ranged from 49 to 23 incorrect responses. As the experimenters were unable to shift students from one school period to the next, we were forced to assign the students to classes within each period. This was accomplished by randomly assigning all students who received a score of 49 to each of the three conditions; then all who received a score of 48 were randomly assigned to the classes and so on through the score of 23. This method was used for both periods. When there were only two people having a single score, one student was

included who had the next lower score. For example, if only two students received scores of 49, then another student was included who had received a score of 48; then the three were randomly assigned to each of the three experimental conditions.

APPENDIX O

IMPRESSIONS

The first contact the students had with the experiment was September 15, 1969. They were in their regularly scheduled classroom settings. The teachers were asked to distribute the material and to keep their answers to any questions to a minimum. The three teachers indicated that the students followed directions, accepted the explanations given, and completed the questionnaires.

Following the experiment conducted on September 22, 1969, impressions were gathered from the various people involved as to the effectiveness of the presentation, validity of the actor, impact of the presentation, and any other free flowing comments that were expressed or witnessed during and after the experiment.

1. Impressions of the Actor

The actor was asked whether he had felt any difference in the responses he received from the students when he was introduced as the doctor or the social worker. He said that he picked up no difference in the responses from the students to him in the different roles. "Each class appeared to be paying attention to what was said and I could not tell any difference in the attention span or depth of concentration to what was being said. Each class appeared to be paying attention pretty well." The actor was asked whether he

felt any difference, himself, when he was introduced in the different roles and he replied: "No, I felt just the same in either role and attempted to present the material the same." He was asked if he felt there was any difference in the manner of presentation; that is, the way and ease with which the material was read between the first and last presentations. He indicated that he had read the material thoroughly before presenting it and felt that he had maintained the same level of speed and tone inflection, and number of times he referred to the material while presenting it was approximately the same. One of the experimenters timed the four presentations and found that they were all within two minutes of each other. The variation was attributed to a difference in readiness of the teachers to introduce the actor. Also, the actor entered the classroom when he assumed that the pre-testing was completed and reported that the waiting was due to the collection of the tests.

The actor was asked if he received any verbal or non-verbal feedback from any of the students. He indicated that the time element was such that no time was available for verbal feedback; his impression was that he received no non-verbal feedback. "The students listened, and the speech was short enough so that they did not start moving around in their chairs." The general impression of the actor is that each class received the same in method of presentation, and the responses to the presentation were very similar in all

of the experimental conditions.

2. Impressions of the Teachers

Each teacher was first asked to call roll and then to identify those students who were to change classes. All three teachers indicated they were asked by the students why they were being moved, but they did not provide any explanation beyond the fact there was going to be a change in the classes for that day only. Since the time element was stressed to the teachers before the experiment itself commenced, they were aware of its importance and did not pause to answer questions until after the final test had been completed and collected.

The teachers were interviewed concerning their impressions of the presentation, itself. All three had the same general comments as did the actor concerning the verbal and non-verbal responses from the students. They indicated that several questions arose after the actor had left the room. Non-verbal communication was observed in that the student paid close attention to the presenter and shifted little in their seats. The teachers were questioned closely regarding side glances, whispered comments to fellow students, or any other form of distractive communication. Each teacher observed side glances which were between friends but did not see anything distracting or otherwise significant in relation to the material being presented. The two teachers

having the control group conditions were asked to comment on how the study time was utilized by the students; their instructions were to provide a study period. The teachers felt that, for the most part, the students were cooperative.

During the tests, some of the students had questions about the meaning of certain words in the tests. The teachers responded only by explaining or defining the word with a minimum of elaboration. Some of the words that required an interpretation were: "dry areas," "Alcoholics Anonymous," "misdemeanor," and "on the wagon."

The bulk of questions from the students came after the last test had been completed, handed in, and before one of the experimenters could come into the room to explain the entire sequence. Typically, questions arose in the areas of "the effects of alcohol." Many students wanted to know what various types of drinks would do to them and how much alcohol would be required to get a person drunk; for example, "Can I get drunk on three beers?" The teachers attempted to answer the questions as best they could in relation to the effects of alcohol. When the experimenter revealed the true identity of the actor, many students were surprised and expressed that they had accepted the person as introduced. Some responded with "Are you really who you say you are?", "Man, have we been fooled!", and "Who can we believe now?" These responses were in accord with the experimenter's expectations as they had recently entered a new school and

were usually willing to participate in new experiences. The teachers reported later that the students asked for reassurance from them as to what had actually happened, what they had been a part of and, who, exactly, was the actor. The subject of alcohol was of sufficient interest to them that they returned to that topic as soon as they had been reassured.

3. Impressions of the School Principal

The experimenters had considerable contact with the school principal prior to and during the planning stages of the experiment. He was questioned concerning any feedback about the experiment that he received from the students or the teachers. He indicated that the only feedback he received was from the teachers concerning the smoothness with which the experiment had been conducted. The principal also indicated that the teachers were pleased with the response they received from the students and were confident that they, as teachers, had done as instructed. The principal received no feedback from the students.

4. Impressions of the Experimenters

One of the experimenters indicated that she was of the impression that the actor felt and functioned equally comfortably in both roles. Having had the opportunity to observe him assuming the role of the physician and the role of the social worker from outside the classroom, she was able to evaluate the presentation in a way similar to that of the

students. This experimenter also felt that the actor spoke slowly and distinctly; his voice was steady and natural. Eye contact with the students was "natural," in that he had looked down at the written information occasionally. Thus, he did not convey the impression that he had a memorized speech or that it did not really contain his own convictions concerning the subject of alcohol usage. He did not appear to be merely "parroting" information with which he was actually not too familiar. Finally, this experimenter felt that in both roles, the actor functioned in the same consistent manner, and in both situations, the students listened quietly and attentively.

One of the experimenters observed and had the feeling that the teachers were cooperative and anxious to help. The teachers appeared to be interested in the experiment and wanted feedback concerning the results and findings of the experiment when they were tabulated. The teachers appeared comfortable with the experimental situation and expressed no reservations about introducing and taking responsibility for the actor. They offered to help with the mechanics of the experiment in any way that they could. In summary, the following attitudes were expressed by the teachers:

- 1) They were more than happy to help as they had been through this themselves.
- 2) This is information of value and related to student interest.

- 3) It is information that all students should have; many are not given any information or training at home.
- 4) They (the students) can learn about biology any day of the week.

The other experimenter explained the experimental situation to the students and answered pertinent questions following the final presentation. At the end of the third period classes, he indicated to the students that they had been asked to answer the questions to determine how much they knew about alcohol usage and abuse. They were told that they would receive a more complete account of the experience they had been a part of on the following day; they were asked not to talk about what they had just experienced. Again, from all indications, the students responded as requested and did not talk about the test; this was supported by the fact that the fourth period classes appeared to be surprised to learn that the actor was actually neither a social worker nor a physician.

This experimenter talked to the fourth period classes on the second day of the experiment and to the third period classes on the following day. Upon explaining the full and true nature of the study, the students registered a surprise. Typical comments were that they had not known who the actor was and had accepted him as introduced. The content of the material was discussed and the questions centered around "the effects of alcohol usage." Feedback and impressions

such as these indicate that the students did listen to the content of the material and were attentive to the communicator while he was delivering the presentation. Some students were able to remember some of the information that had been presented in the speech as a further indication that they were listening to the content.

5. Summary

The concensus of all who were involved in the experiment was that:

- 1) Verbal and non-verbal feedback indicated that the students did listen to the presented material.
- 2) The students accepted the actor as introduced and had no reason to doubt his role at the time of the presentation.
- 3) Contamination from students in one class period revealing information to the next was minimal.
- 4) Some connection was made between the material in the first and second days but with no significant effect.
- 5) The students accepted the mechanics of the experiment and complied with the instructions.