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ATTITUDE CHANGE OVER TIME AS A FUNCTION
OF EGO INVOLVEMENT, COMMUNICATOR
CREDIBILITY AND NUMBER OF EXPOSURES TO
THE COMMUNICATION.**

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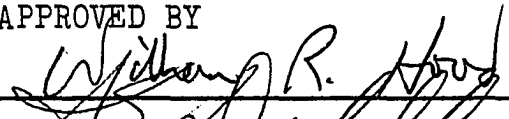
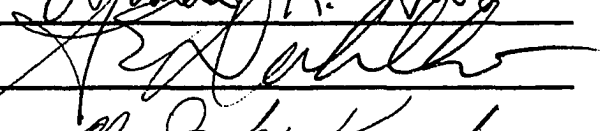
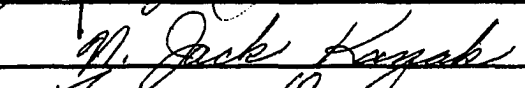
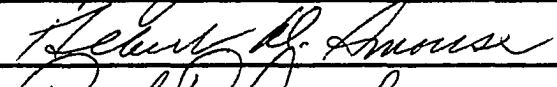
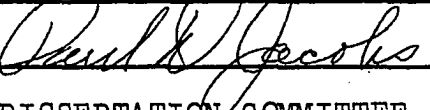
ATTITUDE CHANGE OVER TIME AS A FUNCTION OF EGO
INVOLVEMENT, COMMUNICATOR CREDIBILITY AND
NUMBER OF EXPOSURES TO THE COMMUNICATION

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
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degree of
DOCTOR OF PHILOSOPHY

BY
GEORGE ALLEN LETCHWORTH
Norman, Oklahoma
1968

ATTITUDE CHANGE OVER TIME AS A FUNCTION OF EGO
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CHAPTER I

INTRODUCTION AND PROBLEM

Since the 1930's there has been an increasing amount of research that may be subsumed under the general heading of attitude change. The majority of the attitude change studies have investigated the phenomenon as it exists immediately following an experimental exposure to a communication lacking the personal involvement of the subjects. In general, there has been a paucity of research investigating both the long term effects of attitude change and those factors which may determine that change. Two major assumptions have been made regarding attitude change studies that have affected the direction of the research. The first assumption has been that maximum attitude change occurs a short time after the experimental exposure (Annis & Meier, 1934; Peterson & Thurstone, 1933; Sims, 1938; Wallen, 1942). The second assumption has been that topics lacking personal involvement should be used in attitude change studies since they are more sensitive to

experimental manipulation. This sentiment is expressed by both Hovland and Weiss (1951) and Kelman and Hovland (1953).

Both of the preceding assumptions have been made in the presence of contradictory evidence. A few studies have indicated that the attitude change affected by a communication may increase as time passes; this phenomenon has been referred to as a "sleeper effect" (Hovland, Lumsdaine, & Sheffield, 1949; Hovland & Weiss, 1951; Weiss, 1953; Kelman & Hovland, 1953). Sherif, Sherif, and Nebergall (1965) indicated that the involvement of a subject in the communication topic is a crucial variable in attitude change and deserves to be investigated. The subject's perception, judgment, and consequential acceptance or rejection of the communication may depend upon the degree to which he is personally involved in the topic.

The studies investigating the sleeper effect have dealt with source credibility, selective forgetting, and reinstatement of the communication source. Traditionally these studies have used only a single estimate of attitude change, and the personal involvement of the subject has not been assessed.

Sleeper Effect

The discovery of a "sleeper effect" came from the study of the persistence of the influence of mass media. The sleeper effect is a phenomenon which is related to attitude change and the persistence of that change over weeks or months. It occurs when attitude changes toward the communi-

cator's position are larger after a period of time, usually several weeks, than immediately after the communication.

The term "sleeper effect" has been applied to both the retention of information and to attitude change. Some studies have considered only retention, such as Holaday and Stoddard (1933) and Zagana and Harter (1966). Other investigators, such as Hovland and Weiss (1951), were mainly interested in attitude change. Investigators such as Hovland, Lumsdaine, and Sheffield (1949), Kelman and Hovland (1953), and Watts (1967), were interested in both retention and attitude change.

An awareness of a sleeper effect in the research literature has been traced to some early experiments using mass communications to change opinions. In 1933, Peterson and Thurstone reported a study in which they demonstrated that two films, neither of which produced any change when used alone, could produce attitude change when shown together. They also reported a cumulative effect in attitude change when three motion pictures were shown at one-week intervals. Measurements made ten weeks to nineteen months following the viewing of the films indicated the persistence of a measurable attitude change, and this was interpreted as a sleeper effect.

Another study in 1933 by Holaday and Stoddard attempted to assess the retention of materials presented in motion pictures. They found that occasionally there was a greater retention of the film content a month and a half to three months after the showing of the film than the day after the showing. They explained this sleeper effect by reasoning that all of

the motion picture may not be retained at a conscious level for very long, and this would account for poor retention a day after the showing. After several weeks the retention of the motion picture would be quite high because the posttest served as a cue for the important details of the motion picture, and the unimportant details have been forgotten.

The use of the sleeper effect as an explanatory device emerged again in World War II experiments on mass communications conducted by Hovland, Lumsdaine, and Sheffield (1949). Infantry companies were matched and used as experimental and control groups. The soldiers were tested and retested, with the experimental group viewing the "Battle of Britain" film between tests. For some experimental companies the post measure was five days after the film; for others it was nine weeks. The experimenters found that factual information showed greater forgetting over the 9-week interval but that some opinion changes demonstrated a net increase with time. The experimenters referred to the phenomenon of a net increase in opinion change with time as a sleeper effect.

Hovland, Lumsdaine, and Sheffield found a sleeper effect among the better-educated soldiers for those questionnaire items initially associated with high education. The same phenomenon was found among the less well-educated soldiers for those questionnaire items associated with low education. This particular pattern might suggest some predisposition hypothesis, such as proposed in Sherif's social judgment-involvement approach to

attitude change. The results, however, were interpreted by the experimenters in learning-forgetting terms.

A subject soon "forgets" the ideas he has learned which are not consonant with his predispositions, but . . . he retains without loss or even with an increment those ideas consonant with his predispositions (Hovland et al., 1949, pp. 192-193).

In 1953, Hovland, Janis, and Kelly reinterpreted the educational differential in the sleeper effect as being

due to differential experiences after the communication. The individuals who changed their opinions further in the direction of the communication belonged to socio-educational groups whose prevailing opinion was favorable to the communication, while those who changed negatively belonged to groupings with negative attitudes toward the issue presented (p. 261).

The attitude change may have been due to reference groups, as suggested by Hovland et al. (1953). However, it could also have been attributed to the attitude position of the subject and his personal involvement in the issue or to an interaction between these and other components. Thus, there may be factors affecting the sleeper effect other than the processes of learning and forgetting and communicator credibility.

Riley and Riley (1959) have indicated that ". . . the recipient is more apt to be influenced by a message when he is given a role as an active communicator" (p. 573). Catton (1960) has interpreted Riley and Riley's statement to mean that a large proportion of the effectiveness of a message is determined by the post-communication experiences, especially

social experience. Catton limited himself to exploring the relation between communication and post-communication experience. He hypothesized that a single mass communication message could produce cognitive restructuring. One hundred ten college students were asked to rank seven opinion items on the Cold War, ranking from most favorable toward involvement to least favorable toward involvement. The students were asked to rank the statements according to three different instructions:

first, in the order of their personal agreement with them; second, the way you think a person who is extremely opposed to the United States being involved in the cold war would rank them; and third, the way you think a person who is extremely favorable to the United States being involved in the cold war would rank them (p. 351).

The questionnaires were collected and a ten-minute movie was shown. The movie was an experimental film by Norman McLaren entitled "Neighbors." The film depicted an allegorical account of war and demonstrated its absurdity. Immediately after the film, the same questionnaires were distributed, and the students were again asked to rank the seven statements according to the three sets of instructions.

The potential for demand characters (Orne, 1962) to confound the data is great, but if we overlook this there was an interesting result. There was a tendency for the film to change cognitive structure, and the results were interpreted as indicating that cognitive structure can be changed.

Catton raised two interesting questions: (1) If you modify the cognitive structure, will this result in a sleeper effect that is greater than the immediate attitude shift? This question was not answered by Catton. (2) Eleven of the 110 subjects changed their cognitive structures after the communication but did not demonstrate an immediate opinion change. Will the attitudes of these eleven subjects change with the passage of time? Catton's experiment did not provide for a later opinion measurement which would have answered this question. The attitude measurement and design of the present study should provide an answer to the preceding two questions.

Hovland, Lumsdaine, and Sheffield (1949) suggested several hypotheses to account for the sleeper effect phenomenon: First, individuals who are predisposed to accept an opinion, but who have not done so at the time of the first opinion measure, may later change their opinions, thus displaying a sleeper effect. Second, if the content is retained and the source forgotten, a sleeper effect could occur. Third, the implications of the message could be retained or be cued to consciousness by later situations, but the specific content could be forgotten. This type of situation could have the cumulative effect giving rise to a sleeper effect. Fourth, the details that first limited the generalizability of the basic idea are forgotten.

It should be noted that three of the four hypotheses attempt to explain the sleeper effect as a function of forget-

ting. The first hypothesis, which refers to a predisposition of the subject to accept an opinion, has not been clearly related to the sleeper effect. The present study will attempt to investigate this hypothesis.

Hovland and Weiss (1951) reported a study in which they attempted to correct for some of the methodological difficulties in the sleeper effect found by Hovland et al. (1949). Hovland and Weiss presented an identical communication to two groups, varying only the credibility of the communicator. One group was told that the communication source was highly "trustworthy," and the other group was told that the communicator was generally "untrustworthy." There were two experimental groups, one with a highly credible source (H-C) and another with a low credibility source (L-C). Opinion questionnaires were administered to both groups before the communication, immediately after the communication, and four weeks after the communication.

The questionnaires tested for both retention of material and opinion change. Even though Hovland and Weiss stated that the topics were of current interest and of a controversial type, they did not present any evidence for this statement. The question could be raised regarding the personal involvement the students would feel toward the topics. The results indicated that the H-C and L-C did not differ in the amount of factual information learned and the amount retained after four weeks. The H-C and L-C groups did differ in regard to

opinion change. Immediately after the communication the H-C group changed significantly in the direction advocated by the source. However, this difference decreased during the four weeks. So at the time of the fourth-week measurement, the H-C and L-C groups did not significantly differ in amount of attitude change. (See Fig. 1.) It was also noticed that forgetting the name of the source was less rapid among subjects that initially agreed with the L-C source than among those who disagreed with it.

Hovland and Weiss explained the sleeper effect in terms of learning-forgetting. They assumed that the content is learned equally well by both groups (H-C, L-C) regardless of source but that there is a resistance to accepting the material presented by the L-C source. If this resistance to acceptance decays faster over time than does the message content, which is the basis of the attitude, then the experimenter should obtain a sleeper effect. Essentially, a disassociation of the source from the communication occurs.

This raises several questions, one being how to assume a resistance to the L-C source. When the subject is faced with a decision immediately after the communication, he may be dealing with an issue for which he has no real frame of reference (attitude). So he will seek something that will assist him in his judgment of the communication. The experimental situation conveniently provides some external anchors, which are the high or low credibilities of the communication

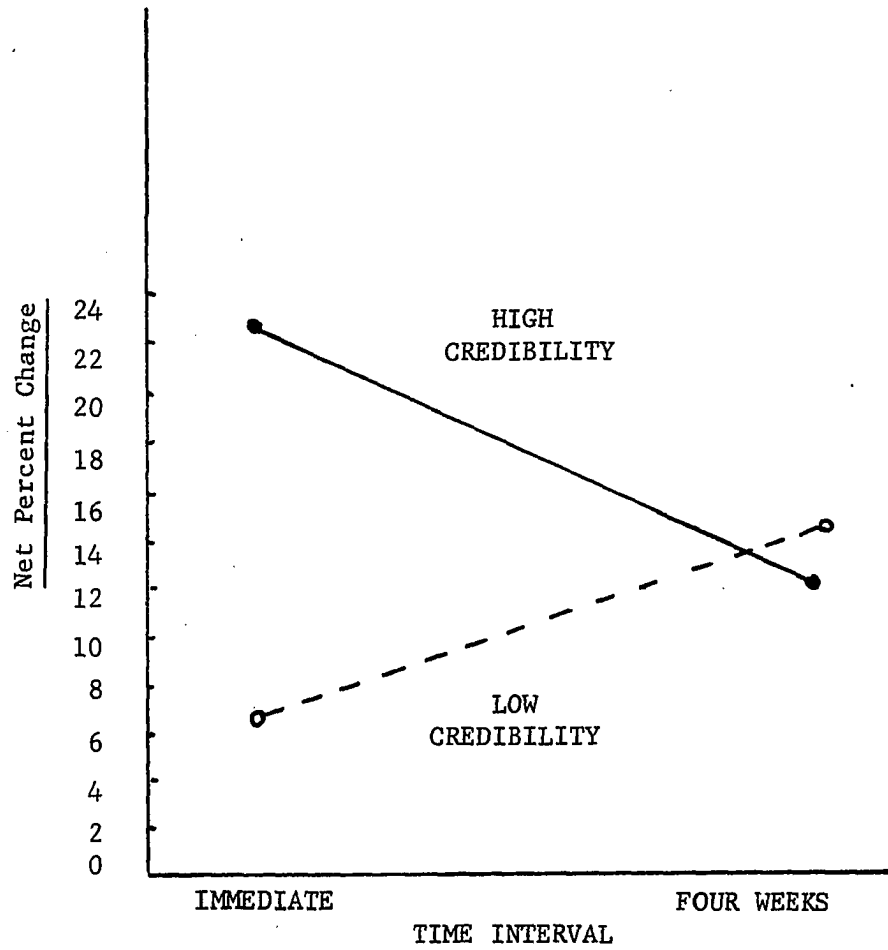


Fig. 1. Retention of Attitude Change (Hovland & Weiss, 1951, p.646).

source. After the communication, the subject fills out the attitude scale, using the communication source as his anchor. Under these conditions the high credibility source should induce more positive change than the low credibility source. Four weeks later the subject is again asked to fill out the same attitude scale. At this time no external cue is provided, and the subject has to resort to internal anchors in order to complete the attitude scale. Since this issue lacks personal involvement for the subject, he will probably select an attitude position near the middle of the scale. When a high credibility source is used, a large amount of attitude change occurs, and this change decays with time. When a low credibility source is used, little attitude change occurs, but with time the person's attitude change increases because he does not use the low credibility source (LCS) as an anchor for his attitude. It would be predicted that if the external anchors (source credibility) were reintroduced at the time of the posttest, the attitude change would be restored, and the H-C group would again evidence more positive attitude change and the L-C group less positive change. This prediction is verified by a study performed by Kelman and Hovland (1953) in which they reinstated the communication source at the time of the posttest.

Kelman and Hovland (1953) were interested in examining the influence the source of the communication has upon the subjects' attitude changes and the subsequent sleeper effect.

They reasoned that changes in attitude over time partially depend upon the stimuli present at the time of the exposure to a communication and at the time of the delayed measurements. The communication they employed dealt with the treatment of juvenile delinquents.

If the communication situation contains factors which elicit a rejection of the communication and the factors are not present at the time of a delayed measurement, then an increase in agreement would be predicted. If, on the other hand, the communication situation contains cues which elicit an acceptance of the communication and these cues are not present when a delayed measurement is made, then the experimenter would expect a decrease in agreement with the communication. In an experiment on communication and attitude change the source of the communication is an important factor in the subject's frame of reference. This is especially true when the experimenter presents the subject with an attitude topic toward which he has little personal involvement and few internal anchors.

In the Hovland and Weiss (1951) study the source was present in the communication situation but was absent during the delayed posttests. So perhaps the sleeper effect obtained was due to the presence immediately following the communication of the positive and negative communication sources, while these sources were absent from the posttests. Kelman and Hovland (1953) stated:

The communicator constitutes a mediating cue for acceptance or rejection. With the communicator absent at the time of delayed testing the increase in agreement produced initially by the "positive" communicator would be removed (resulting in a greater decrease in agreement over time than could be accounted for by the amount of forgetting of the content). Similarly, the removal of the "negative" communicator would remove a cue for rejection. Many cases of the removal of the negative effects of rejection would more than offset the loss due to the forgetting of the content, and thus produce a net increase in agreement with the communication (sleeper effect) (p. 327).

Kelman and Hovland reasoned that the sleeper effect would be reduced if the communicator became a cue for rejection or acceptance at the time of delayed measure. The experimental reinstatement of the positive and negative sources at the time of delayed measurement was the basis of their experiment. They presented 330 senior high school students with identical communications dealing with juvenile delinquents. The communications were given by a source that was established as being positive, negative, or neutral in terms of being informed and biased. Opinion questionnaires were filled out by the subjects before the communication, immediately afterwards, and three weeks later. For half of the subjects in each communication source group, the communicator cues were reinstated at the time of the delayed three-week test. The source was reinstated by playing back on a tape recorder the introduction of the source. For a graph of the results of the study see Fig. 2.

When the source was not reinstated at the delayed three-week test, there was a decline over the three-week period in

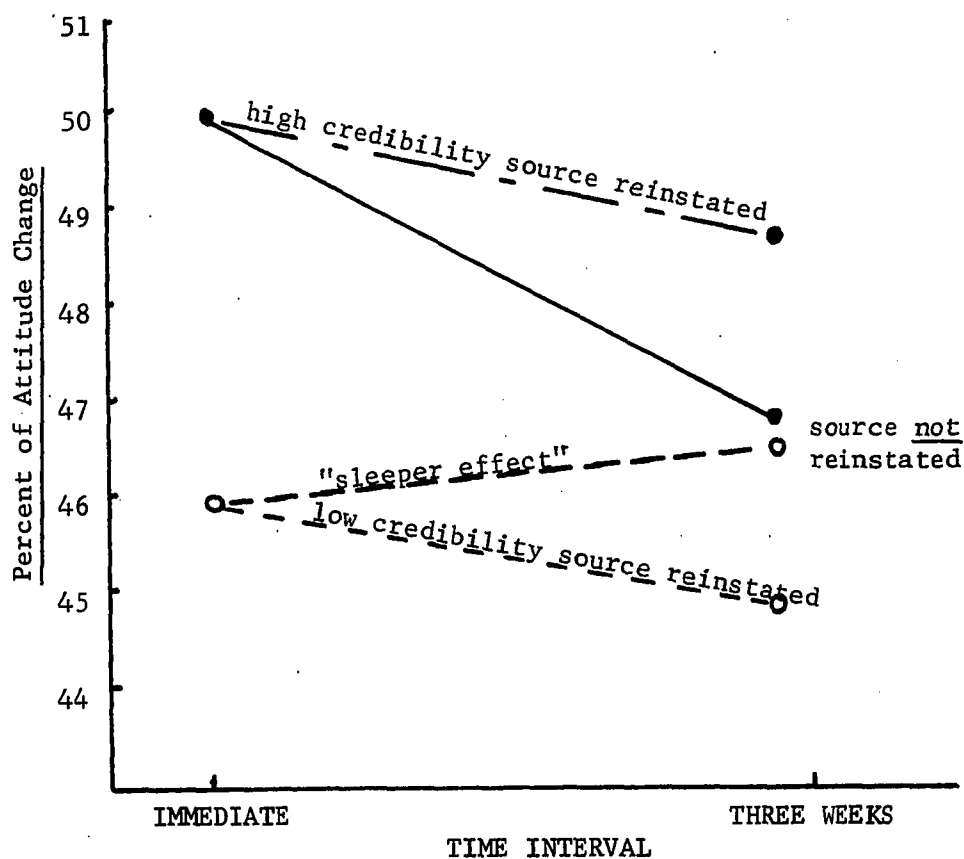


Fig. 2. Effects of Prestige Factors on Degree of Belief Immediately after the Communication, Three Weeks later without "Reinstatement" of the Communicator, and Three Weeks later with "Reinstatement" of the Communicator (Kelman & Hovland, 1953, p.333).

extent of agreement with the positive communicator and an increase with the negative communicator, which replicated the findings of Hovland and Weiss (1951).

Reinstatement of the communicator at the delayed three-week test period had the predicted effect: the reinstatement increased the extent of agreement with the positive communicator and decreased the agreement with the negative communicator. An analysis of the results was made in terms of learning, retention, and the effects of communicator prestige.

Kelman and Hovland's (1953) study demonstrates very nicely the effects of external anchors on attitude change when subjects have little personal involvement in the issue. What would occur if the subjects were confronted with a discrepant communication on an issue which was personally involving? This is a question that has not been answered in the context of the sleeper effect. Sherif et al. (1965) would predict that highly involved subjects would possess existing internal anchors with which they could judge the discrepant communication. The external anchors of high and low source credibility (HCS, LCS) would exert far less influence on the judgment process, and less influence on the amount of attitude change. With highly involved subjects the HCS would have some effect but the LCS would have very little. If a group of subjects who lacked personal involvement or were low in involvement were selected and exposed to

the same discrepant communication, their attitude changes would be more affected by the external anchors (HCS, LCS). In general, the attitudes of highly involved individuals would be stable and resistant to change.

Kelman and Hovland (1953) reinstated the sources of the communication at the time of the delayed posttest, which would make the experimental "demands" quite obvious. However, the source could be reinstated less obviously by reinstating both the source and the communication. The present study will attempt to ascertain the effects of reinstating the entire communication to subjects with varying degrees of ego involvement.

Retention of Attitude Change Over Time

Related to the research investigating the sleeper effect are the studies investigating the persistence over time of attitude change induced by a persuasive communication. The experimental findings range from a complete loss of attitude change to no loss in attitude change. Chen (1936), Sims (1938), and Walster (1964) found a complete loss of attitude change with passage of time. Cherrington and Miller (1933), Dietrich (1946), and Janis, Lumsdaine, and Gladstone (1951) found some loss in attitude change with time, but most of the induced change persisted. Annis and Meier (1934), Smith (1943), and Youtz, Robbins, and Havens (1964) found almost complete retention of induced attitude change after the passage of time. It might be concluded that there is no standard rate

of decay in attitude change. Rather, the rate of decay of the induced attitude change appears to be closely tied to the experimental conditions and the subjects' perception of the experimental conditions. The study by Kelman and Hovland (1953) where "decay" of the attitude change is prevented by simply reinstating the source of the communication is an excellent example of the effects of the experimental situation.

Watts and McGuire (1964) studied the persistence of induced attitude change over time in relation to the retention of the contents of the persuasive message. Ten sections of an introductory course in education composed the sample. Four sections received their persuasive communications from a negative source, another four sections received the same communications from a positive source, and the remaining two sections served as no-message controls. Each experimental subject participated in four sessions spaced over a six-week interval and in each session read a persuasive communication on a different topic. The subjects read the following topics: Puerto Rico should be admitted to the Union as the 51st state; courts should deal more leniently with juvenile delinquents; the Secretary of State should be elected by the people, not appointed by the President; the state sales tax should be abolished. After the fourth session and for the first time in the experiment, questionnaires were filled out by the subjects. The questionnaires permitted a measurement of attitude change and retention of the contents for all four topics.

The results indicated that recall of the topic and contents of the message was positively related to attitude change one week after receipt of the message. Six weeks after the receipt of the message, attitude change was either independent from or negatively related to recall of the message contents and topic. On the other hand, recall of the side taken and of the specific arguments used in the communication was positively related to attitude change after one week and after six weeks. Those subjects who were able to recall the source of the communication showed more opinion change than those who could not recall the source. The retention of the source, perhaps, allowed these subjects to use the source as a basis for their attitudes.

There was an indication of a sleeper effect occurring between the source (positive and negative) and time since receipt of the message (1-6 weeks). Immediately after the communication, the positive source induced an average of 2.10 points of attitude change on a fifteen-point scale. The negative source induced an average of 1.54 points of change. The initial change in both attitudes decayed fairly steadily over the six-week period, but the positive source condition decayed more rapidly. By the end of the sixth week the average attitude change for the positive source was slightly lower than the average attitude change for the negative condition. When both the positive and negative conditions' sources were combined, there was a 69% drop in

attitude change from immediately after to six weeks after the communication.

The average college student does not devote a great deal of thought to the topics chosen by Watts and McGuire. It might be suggested that the majority of students participating in the experiment lacked involvement in these topics and would not have an established frame of reference with which to judge the communications. The subjects who lacked a personal involvement in these issues, perhaps, would use the external cues provided by the experimental situation to assist them in their judgments. This would explain why those subjects who remembered the communication source showed more positive attitude change.

The decay of induced attitude change has also been found in research dealing with the effects of fear appeals. Leventhal and Niles (1965) were interested in the effect of two variables--the duration of the fear-arousing communication and the time interval between exposure and measurement. Movies selected to arouse fear of automobile accidents were shown for 8, 16, 24, and 32 minutes. Attitudes were measured immediately after exposure, one to two hours later, one day later, or one week after exposure to the movie. There were 16 groups comprising a 4×4 factorial design. The results of the study indicated a decrease in preventive attitudes with an increase in time, a finding consistent with the other studies which measured the persistence of

attitude change over time. The study also demonstrated that the greater the duration of the fear-arousing movie, the greater the increase in preventive attitudes. There was a tendency for the induced attitude changes to decay more slowly in those groups exposed to the longer films; however, the interaction was not significant.

The decay of induced attitude change may also be seen in Kelly's (1955) study of group-anchored attitudes. Interested in the relationship between the salience of group membership and the resistance of group-anchored attitudes to change, Kelly hypothesized that when exposed to counter-norm communications, group-anchored attitudes are more resistant to change when the group is highly salient to the subjects than when the group is low in salience. Catholic college and high school students were placed in two experimental conditions. In the high group salience condition, the subjects were given a first communication which was designed to heighten the salience of Catholic membership and a second, counternorm communication. The low-salience group first received a neutral communication which would not arouse their Catholic sympathies; then they received the counternorm communication. The immediate test of opinion change indicated that the low salience group changed their attitudes more toward the communication. The high salience group changed their attitudes toward the communication, but not as much as the low salience group. Three days later most of the subjects

were again tested to determine the retention of the induced attitude change. The high salience group had regressed to their original attitudes. The attitude change induced in the low salience group had also decayed, but there was still evidence of the attitude change remaining. There was a significant difference ($p < .05$) remaining between the low salience group and high salience group at the three-day delayed test. Kelley stated this indicated that the greater the initial change, the greater the opinion change shown on subsequent measurements. However, this statement would not be supported by the sleeper effect studies.

Watts (1967) found very little decay occurring in induced attitude change even after six weeks when the subjects actively participated in writing any argument supporting the issue. Those subjects who were in the passive participation condition simply read a passage and underlined the most important statement. The issues used were: Puerto Rico should be admitted to the Union as the 51st state; courts should deal more leniently with juvenile delinquents; the Secretary of State should be elected by the people, not appointed by the President.

There appears to be a common element in all those studies which demonstrated a decay in induced attitude change. The studies usually employed issues which were not highly salient to college subjects. The college subjects were exposed to some rather extreme communication and then given an attitude

scale and asked to state their attitudes. Since the subjects probably lacked an established attitude on which to base their judgments, they may have looked for external cues which would have helped them make their decisions. The experimental situation usually provided the subjects with a convenient external anchor, that is, the credibility of the communication source. The attributes of the communication source may have exerted a great deal of influence on the attitude judgments of the subjects. When the subjects were retested several weeks later, the subjects were given the attitude questionnaire and requested to complete it with no external cues provided. The subjects were forced to rely upon their memories of the experimental situation and their own internal anchors. Since the subjects forgot many of the details of the experimental situation, they usually relied on the few memories they had of the experiment and their own attitudes on the issue. The issues employed lacked involvement for the subjects; and, consequently, the subjects gave attitude positions which were not as extreme as their original judgments, and "attitude decay" occurred.

What would occur if the subject had an internal frame of reference with which to evaluate the communication source and the communication? This would be the situation if the subject were involved in the issue and possessed attitudes regarding it. When placed in the experimental situation, he might not have to rely on external anchors but could use his

internal anchors. In this situation the experimenter would predict less change and decay. The highly involved individual should be very consistent in his judgments of discrepant communications which are salient to him.

Sherif's Social Judgment-Involvement Approach

Sherif and Sherif (1967) define an attitude operationally as

the individual's set of categories for evaluating a stimulus domain, which he has established as he learns about that domain in interaction with other persons and which relate him to various subsets within the domain with varying degrees of positive or negative affect (p. 115).

The social judgment-involvement approach to attitudes that Sherif proposes has evolved from several sources. An early source was Muzafer Sherif's early study of ego-involvement, which is summarized in The Psychology of Ego-Involvements (Sherif & Cantril, 1947). The concept of ego involvement provides a method for understanding the intensity of an attitude. If a person is ego-involved on an attitudinal issue, then he reacts to a counter-communication quite differently than a person who is not ego-involved on the issue.

Another source that has led to the development of a social judgment-involvement approach has been the research on psychophysical and psychosocial judgments which began with a program of research in 1948. The results of the experiments on psychophysical and psychosocial judgment are summarized in Social Judgment (Sherif & Hovland, 1961). A recent source is

Attitude and Attitude Change (Sherif, Sherif & Nebergall, 1965), which is the most complete statement of the social judgment-involvement approach. The most recent source, however, is Attitude, Ego-Involvement, and Change (Sherif & Sherif, 1967). The two latter sources present a contemporary view of the social judgment-involvement approach to understanding attitudes and their changes.

Sherif refers to his definition of attitude as being an operational definition; consequently, it is closely tied to his measurement techniques. In Attitude and Attitude Change, Sherif et al. (1965) elaborate on the technique of attitude measurement, which they feel is necessary for a veracious representation of an individual's attitude. Sherif contends that attitudes are inferred from evaluative behavior; and evaluative behavior is displayed when people perceive objects as good or bad, agreeable or disagreeable, likable or unlikable. The criterion for evaluation of stimuli is acquired from the culture and consists of a group of evaluative categories that a person uses to judge objects or classes of objects. A person's attitude can be observed by asking a person to evaluate and categorize into acceptable and unacceptable categories a group of statements ranging from favorable to unfavorable toward a specific topic. Since Sherif conceptualizes attitude measurement in terms of categorization, he does not accept the belief that an individual's position on an attitude can be determined by a single point

on an attitude scale. It will be recalled that all of the studies with the sleeper effect employed only a point attitude scale.

The following discussion will examine a few of the commonly used "single-point" attitude scales. Guttman (1950) has proposed a unidimensional model for scaling attitudes. The unidimensional model assumes that a person who accepts a position on an issue will also accept all less extreme positions on the issue. If the assumptions underlying the model are met, then all the responses to each attitude statement can be reproduced from a single score. One of the major difficulties with the model is finding an issue which will meet the unidimensional assumptions. Another difficulty is the time required to construct a unidimensional scale.

Bogardus (1925) has developed a scale which measures social distance and has demonstrated that some social dimensions are cumulative. If a person states that he is willing for someone to marry his sister, then he would also be willing to allow him to attend the same school and live in the same community. The problem with the social distance scale is that there are issues which are not cumulative, and this measurement technique would not be adequate to assess the issues. An example of a noncumulative issue is when a person will accept only a strong proposition and rejects any positions which are less extreme, even though they might be moderate pro-statements.

Osgood, Suci, and Tannenbaum (1957) proposed to scale attitudes by means of the semantic differential which they developed. They presented a concept to an individual and asked him to rate it on a series of evaluative scales. Each end-point of the evaluative scale was anchored by polar adjectives (likable-unlikable, strong-weak). The individual checked his position on each evaluative scale regarding the concept presented. The average of his responses was a single score. Sherif contended that the semantic differential was an inadequate technique for measuring attitudes because it was limited to evaluative content. It also did not provide information regarding the other alternatives on the concept. The attitude scales developed by means of techniques proposed by Thurstone (1929) and Likert (1932) were also unacceptable to Sherif because they yielded only single scores.

Sherif, Sherif and Nebergall (1965) listed three minimum requirements that an attitude scaling technique must meet in order to be acceptable. An attitude scale must provide:

1. Indicators of the range of positions toward the object of the attitude that is encompassed by the individual's evaluative categories (acceptable or objectionable, in some degree).
2. Indicators of the degree of the individual's personal commitment to his own stand toward the object; that is, of the degree of his ego-involvement with the issue.
3. Ways and means to ensure that the individual responds in terms of his attitude toward the object rather than with what he thinks the investigator or other persons conceive as a socially desirable response (pp. 20-21).

Research procedures for attitude assessment

Sherif has developed two different research procedures for attitude assessment. Each of these procedures are consistent with Sherif's concept of attitudes, and each yields latitudes of acceptance, rejection and non-commitment; however, each method has some distinct advantages and disadvantages. The two research procedures have been labeled the "method of ordered alternatives" and the "own categories procedure."

Devising an attitude questionnaire for the method of ordered alternatives requires obtaining a representative sample of statements regarding the issue to be assessed. From this sample, statements are selected so that they represent a range extending between two extremes. The only assumptions made regarding the scale are that the statements on the scale are representative of the total range of statements and that the statements on the scale can be reliably ordered. The scales typically have nine statements that span the extremes. The subject is asked to choose the statement most acceptable (MA) to him, all the other statements which are acceptable (A), the statement most objectionable to him (MO), and all the other statements he finds objectionable (O). These measures are all that is necessary to obtain latitudes of acceptance (LA), rejection (LR), and non-commitment (LNC). The latitude of acceptance includes the most acceptable statement and all the other statements found acceptable by the individual. The latitude of rejection

encompasses the most objectionable statement and all the other statements deemed objectionable. The latitude of non-commitment is composed of those statements that have not been categorized as either acceptable or objectionable. Sherif does not assume that the scale used to obtain the latitudes is cumulative or that the distances between statements are equal.

The advantages of having a person categorize an attitude into the latitudes of acceptance, rejection, and non-commitment may be conceived of as twofold. First, the individuals who choose an item as most acceptable to them may vary greatly in regard to other items acceptable to them and those items that they find objectionable. The information given by the MA position is greatly enhanced by the information provided by the latitudes of acceptance and rejection. Second, the degree to which a person is involved in an issue will influence the latitudes in a systematic manner. Typically, the person who is highly ego-involved in an issue will have a small latitude of acceptance, a small or non-existent latitude of non-commitment, and a large latitude of rejection. An index of ego involvement is obtained by using the size of the LR as an operational definition. Thus, the measurement technique proposed by Sherif provides more information than the customary single score attitude measurement technique.

The additional information provided by Sherif's approach is especially desirable in examining a phenomenon such as the sleeper effect. The measurement provides an opportunity to

discover what changes in an attitude as a result of a discrepant communication and time. If a person is exposed to a discrepant communication and enlarges his latitude of acceptance but does not change his MA position, then he may be much more receptive to other discrepant communications. The traditional single-point attitude scale would not have detected the change, for it would only have measured the MA position.

The method of ordered alternatives is the technique that will be used in the present study. This method is based on the study of the categorization (judgment) process. The dynamics of the categorization of statements into the latitudes of acceptance, rejection, and non-commitment are apparent in the own and fixed categories procedures. Sherif and Hovland (1961) use the psychology of judgment to account for the categorizing behavior that yields the latitudes of acceptance, rejection, and non-commitment. The complete background and development for this technique may be found in Social Judgment (Sherif & Hovland, 1961). In the own categories procedure, a large number of statements are chosen in order to completely span the distance between the extreme end-points of the issue. A large number of the items should be highly variable so they are not consistently placed in the same category by all the subjects. A subject is given the pool of statements, and perhaps one extreme end-point is explained. The subject is instructed to sort the statements

into as many categories as he wishes so that all the statements in each category appear to "belong together." When the subject completes the task, he may be asked to designate which categories are acceptable and which categories he finds objectionable.

Sherif contends that as the subject categorizes a series of attitude statements, his judgments may be influenced by internal and external factors operating prior to the judgments and at the time the judgments are made. Previous experiences can influence psychophysical judgments. A man who has been lifting heavy weights will judge a 6-oz. weight to be light, but a man who has been lifting items weighing less than 1 oz. will judge a 6-oz. weight to be heavy. In psychosocial judgments, if an individual has been exposed to one point of view for a period of time, such as a particular prejudice of the parents, and if he has internalized this view, then his cognitive structure will affect his judgment of a statement on that issue.

Sherif and Hovland (1961) contend that all stimuli preceding the judgment or at the time of the judgment do not have the same amount of influence. The stimuli which are most influential in an individual's judgment are referred to as "anchors." When an individual judges which statement or statements to accept on an attitude scale, the end-points of the scale may serve as anchors if he is not instructed otherwise. Anchors may be external to the individual, like the end-points of

an attitude scale, or they may be internal such as prior instructions or motivations. Hunt and Volkmann (1937) demonstrated that an internal anchor could affect the judgment of subjects. The subjects were instructed to imagine the endpoints of the material being judged. Instructions to imagine the most extreme case (anchor) produce "contrast effects" in the subjects' judgments.

A contrast effect may be obtained by increasing the difference between the object of judgment and the anchor. As an anchor becomes increasingly different from the object of judgment, there is a tendency to displace the object further from the anchor than it actually is. Thus, a contrast effect occurs when the difference between the anchor and object of judgment is exaggerated. If the anchor is moved toward the object of judgment, then the object may be displaced toward the anchor. Assimilation occurs when the object of judgment is perceived as being closer to the anchor than it is objectively. Anchors can also be used to improve judgments and to make them more accurate. Hence, the ability of internal and external anchors to improve or distort judgments is a well-demonstrated phenomenon (Sherif & Hovland, 1961).

Sherif maintains that a measure of the subject's involvement or commitment on an issue must be obtained before the concepts of latitudes and anchors can predict attitude change. Sherif defines ego involvement as

the arousal, singly or in combination, of the individual's commitments or stand in the context of appropriate situations, be they interpersonal relations or a judgment test in actual life or an experiment (Sherif et al., 1965, p. 65).

Sherif conceives of the ego or self as ". . . a constellation of attitudes polarized in varying degrees and defining a concept of individual identity" (Sherif et al., 1965, p. 73).

An ego-involving issue is one which is a part of a person's concept of himself. Thus, when a person states "I am a Democrat" or "I am a Baptist," he will also express himself on these topics by stating, "I think," "I feel," or "I believe." These statements are relatively good indicators of how the person defines his self-identity; and when a person is faced with judgments regarding these issues, his self-identity is aroused. Thus, an issue that is ego-involving is one which is linked to a person's ego or self.

Sherif contends that a person's ego is composed of more than one stand or one commitment. Each individual is committed to a relatively large number of ideals, institutions, groups, and so forth, so that there are many facets to a person's ego. The many various commitments may be conceived of as composing a hierarchy of ego-involvements. Sherif states that

when these ties are aroused in relevant situations and produce their respective ego-involvements, the individual tends to regulate his behavior more in accord with those higher in the hierarchy (Sherif et al., 1965, p. 68).

The hierarchy of ego involvements implies that ego-involved

individuals may react consistently to similar situations and consistently over periods of time. Sherif states that there is research to indicate that an ego-involved person's judgments are more consistent and stable than a person's who lacks ego-involvement. (See Klein & Schoenfeld, 1941; Holt, 1945; Huntley, 1940.) In a more recent series of experiments, it has been shown that judgments of performance by other persons are more consistent when the respondent has personal ties with them, that is, is ego-involved, than when he does not (C. Sherif, 1947; Harvey, 1953; Harvey & Sherif, 1951; Sherif, White & Harvey, 1955; Sherif & Hovland, 1961). It would follow from this line of evidence that highly ego-involved subjects may not demonstrate a sleeper effect, while subjects low in ego involvement may exhibit a sleeper effect.

Sherif emphasizes that when a subject is requested to judge a series of objects or statements, the judgments are based on anchors. If an individual judges a series of motivationally neutral objects, then his judgments will be based on external influences such as the end-points of the series or specific stimuli that are introduced as standards (anchors). Sherif states that with a neutral series of stimuli

a given stimulus is discriminated by its stimulus attributes relative to others in the series and the objective salience of specific stimuli in the series, such as most extreme (end) stimuli or other explicit anchoring

stimuli in that universe of discourse (Sherif et al., 1965, p. 14).

When judging motivationally neutral stimuli, the subject brings few internal anchors to the judgment situation. So the judgments can be influenced by the introduction of external anchors.

Sherif contends that if a person is ego-involved in an issue, then his judgments will differ from the judgments of another individual who is not involved. The individual who is low in ego involvement views a series of statements on an issue from a more or less non-existent frame of reference and, subsequently, is more vulnerable to the presence of external anchors. On the other hand, a highly ego-involved individual has committed himself to a stand on the issue. So when he judges some statements of an issue, he may use his own stand as an anchor for his judgments. Thus, the highly ego-involved person's judgments may differ from others who are less involved because of the internal anchors which he brings to the judgment task. Sherif maintains that the assessment of ego involvement is necessary, because a highly ego-involved person is less susceptible to communications or situations designed to change his position. In research on judgmental tasks, the highly ego-involved person is distinguished in several ways (Sherif, Sherif & Nebergall, 1965). The highly ego-involved individual has a large latitude of rejection on the issue, and this latitude affects his susceptibility to discrepant communications. The person with a

wide latitude of rejection may change to a slightly discrepant communication but will not change his attitude in response to a highly discrepant communication. In fact, with high involvement the extremely discrepant communication may be contrasted, and a "boomerang effect" may occur. A boomerang effect consists of the person's reacting to the discrepant communication by moving away from it. Therefore, whether or not a person will change in response to a discrepant communication, and the amount and direction of the change, is a function of ego involvement and the related latitude of rejection. The ego involvement of subjects may vary considerably and, consequently, influence the amount of attitude change induced by a discrepant communication. Sherif contends that if ego involvement can influence a person's judgments, then the ". . . degree of ego-involvement is a crucial variable in predicting reaction to discrepant communication" (Sherif et al., 1965, p. 187). The ego-involved individual is characterized by Sherif and Sherif (1967) in a summary that is based on the research found in Sherif et al. (1965).

1. If a person has an attitude toward a stimulus domain, his judgments of specific objects in that domain are, to some extent, made relative to his own reference scale, in addition to the context of immediate and preceding stimulation. This reference scale is composed of the individual's own categories.
2. To the extent that the stimulus domain has high priority in his self-system (degree of ego-involvement), the task of categorizing stimuli becomes an evaluative task for him, even though he is told to judge according to objective, non-evaluative criteria.

3. To the degree that he is ego-involved, the person uses his "own position" as the main standard for placing items related to it.
4. On a controversial issue (bipolar), the highly involved person uses fewer categories than a less committed person, a fact that is related to the assimilation-contrast effect relative to his own stand (Sherif & Sherif, 1967, pp. 126-127).

The present study is designed to compare the reactions of highly ego-involved subjects and subjects low in ego involvement.

Communicator Credibility

Communicator credibility refers to the characteristics which convey to the subject cues regarding the communicator's authoritativeness and character with respect to the issue at hand (McCroskey, 1966). Hovland and his associates (1953) defined source credibility as the combined effect of

(a) the extent to which a communicator is perceived to be a source of valid assertions (his "expertness") and (b) the degree of confidence in the communicator's intent to communicate the assertions he considers most valid (his trustworthiness) (p. 21).

The dimensions of communicator credibility proposed by McCroskey (1966) and Hovland et al. (1953) are very similar; and this should enhance their meaningfulness, especially since McCroskey's (1966) dimensions of communicator credibility were derived by means of factor analysis. The clarification and explication of communicator credibility is being done by a number of investigators. An outstanding summary of the work may be found in Anderson and Clevenger (1963). Re-

cent factor-analytic studies by Anderson (1961), Lemert (1963), Markham (1965), and McCroskey (1966) have reported significant findings regarding the credibility of the communicator.

The credibility of the communicator is a crucial variable in attitude change studies because of the effect the communication source has on attitude change. There is a large body of data available to support the notion that high credibility sources produce greater attitude change in the direction advocated by the communication than do low credibility sources (Hovland, Lumsdaine, & Sheffield, 1949; Hovland & Weiss, 1951; Hovland, Janis & Kelly, 1953; Tannenbaum, 1956).

If the communicator is ambiguous and the subject is deeply involved in the issue, then Hovland (1959) contends that the subject reacts to a discrepant communication by discrediting the communicator or by considering him as inept and unfair. The subject could also cope with a discrepant communication by discrediting what the communicator has to say (Cooper & Johoda, 1947). The subject may also "distort" the position of the communication source.

Hovland, Harvey and Sherif (1957) found that when the source's position is very close to a subject's position, the subject can estimate the position quite accurately. When the subject is a little removed he tends to view the source as being closer to his own position (assimilation effect). When the source is quite removed from the subject's position, the subject sees the difference as being more extreme than it

really is (contrast effect). Hovland et al., (1957) found that attitude change was related to the discrepancy between a person's position and the communicator's. They found that subjects whose positions were only slightly different from the communicator's were influenced more than those whose positions were extremely discrepant from the communicator's. The results from Hovland et al. (1957) indicate that when the communicator's credibility is ambiguous and the subjects are highly involved, then the greater the discrepancy, the smaller the attitude change.

There have been attitude studies that have found greater attitude change occurring as the discrepancy increased between the subjects' positions and the communicator's position. Hovland and Pritzker (1957) found that a highly credible source could obtain greater change with increasing discrepancy when the issue was low in involvement. Zimbardo (1959) has also found that a highly credible source can bring about more attitude change with increasing discrepancy. Both the Hovland and Pritzker (1957) and Zimbardo (1959) studies obtained greater attitude change with increasing discrepancy when dealing with issues having low involvement.

Studies of communication discrepancy in general indicate that the amount of attitude change is an increasing function of the amount of change advocated (Cohen, 1959; Fisher & Lubin, 1958; Goldberg, 1954; Hovland & Pritzker, 1957; Zimbardo, 1959). There is considerable disagreement,

however, over what should occur at the extreme levels of discrepancy. Hovland et al. (1957) contend that attitude change will continue to increase with increasing discrepancy only for issues low in involvement. Zimbardo (1960) asserts that with extreme levels of discrepancy the subject will move from attitude change to dissociation, disbelief, or discrediting of the communicator. Festinger's (1957) theory of cognitive dissonance, on the other hand, predicts that attitude change will increase with discrepancy as long as there are no other ways to resolve dissonance. The involvement of the subject should not affect the amount of attitude change.

The relationship between communicator credibility, involvement of the subject, and discrepancy of the communication is complex. The problem is simplified, however, when it is conceptualized in terms of the social judgment-involvement approach proposed by Sherif et al. (1965). When an issue is ego-involving the subject has an internal frame of reference which provides anchors for his judgments, and he does not need to use the cues provided by the communication source. The effects of a high credibility source would not be too different from those of a low credibility source. The highly ego-involved person may view the discrepant communication as being further from his own position than it actually is (i. e., contrast effect). The highly ego-involved person would change only in response to a message quite close to his own position, and then the change would be small. The

subject who is not ego-involved in an issue may lack the internal anchors on which to base his judgment, and will be influenced much more differentially by the source of the communication. The high credibility source will produce more attitude change than the low credibility source in subjects that are low in ego involvement. Attitude change will increase with discrepancy, especially with a high credibility source and subjects low in ego involvement.

The Present Study

The present study attempts to investigate the sleeper effect phenomenon within the social judgment-involvement framework proposed by Sherif, et al. (1965). By selecting two groups of subjects differing in degree of ego involvement and placing them in experimental conditions which vary the credibility of the communicator, the number of exposures to the communication, and the time from the reading of the communication to the assessment of the attitudes, it will be possible to evaluate several hypotheses. (1) The sleeper effect should not occur in the high ego involvement conditions. (2) Those subjects who retain the source and/or the content of the article will exhibit greater attitude change. (3) The subjects in the high ego involvement conditions will retain less information regarding the source and content of the article; consequently, they will experience less attitude change. (4) The sleeper effect will be most prominent in newly formed attitudes. (5) Highly ego-involved subjects

will have a more stable attitude structure and will change their MA position less than subjects low in ego involvement.

- (6) The greater the behavioral commitment of the subject, the more stable the attitude structure and the less the MA position will change. (7) The high credibility source will induce more change in the attitude structure. (8) The greater the number of exposures to the article the larger the amount of change in the attitude structure. (9) The subjects low in ego involvement will be influenced more by repeated exposures than the subjects high in ego involvement. (10) Repeated exposures will be more effective with newly formed attitudes. (11) With the passage of time there will be less decay of attitude change among the subjects high in ego involvement. (12) Newly formed attitudes will decay more with the passage of time than established attitudes. (13) The subjects who are highly ego-involved will derogate the author and the article more than the subjects who are low in ego involvement.

CHAPTER II

METHOD

This chapter describes both the selection and administration of the pretest and posttest questionnaires and the relevant methodological procedures employed in this study. The general design is summarized in Table 1, and the discussion of the design will center on this table. The basic analysis of variance matrix is represented in Table 2 and should be referred to for an overall view. The design of the study is based upon the logic of the Solomon 4-group design (Campbell & Stanley, 1963); however, there have been minor alterations in the 4-group design.

The general design of the study consisted of administering the pretest to 842 subjects and selecting from these 99 highly ego-involved subjects (HEI), and 99 subjects low in ego involvement (LEI). Fifty-four subjects who had not taken the pretest were used for six posttest-only control groups. Both the HEI and LEI groups received the same experimental treatment. The following discussion will deal only with the HEI group with the understanding that the LEI group conforms to the same design. (See Table 2.)

The HEI group ($N = 99$) was divided into eight experi-

Table 1

General Design

		Pretest	Post-test 1	Post-test 2	Post-test 3
Experimental Groups	E.G. 1	0	$X_1 0^2$		0
	E.G. 2	0	X_1	0	
	E.G. 3	0	X_1	$X_2 0$	
	E.G. 4	0	X_1	X_2	0
Control Groups with Pretest	C.G. 1	0	0		
	C.G. 2	0		0	
	C.G. 3	0			0
Control Groups without Pretest	C.G. 1		0		
	C.G. 2			0	
	C.G. 3				0

TABLE 2

Analysis of Variance Matrix

High Ego Involvement

Communication Credibility

	High (1)	Low (2)	
EG 1 ^a	111	112	11.
EG 2	121	122	12.
EG 3	131	132	13.
EG 4	141	142	14.
EG 5 ^b	151	152	15.
	1.1	1.2	1..

	C6	C7	C8	
HEI	160	170	180	1.0
LEI	260	270	280	2.0

Low Ego Involvement

Communication Credibility

	High (1)	Low (2)	
EG 1	211	212	21.
EG 2	221	222	22.
EG 3	231	232	23.
EG 4	241	242	24.
EG 5	251	252	25.
	2.1	2.2	2..

x,i,j,k any score
 i ego involvement
 j row
 r each subject
 ego involvement: High(1); Low(2)
 row: experimental 1,2,3,4,5
 control 6,7,8
 column: communication credibility
 High(1); Low(2)
 Control(0)

^aThe difference scores for EG1 are obtained by subtracting the pretest score from the score obtained on X.0.

^bThe difference scores for EG5 are obtained from EG1 by subtracting the pretest score from the final posttest 3.

mental groups and three control groups with nine subjects in each group. Four of the experimental groups were exposed to a discrepant communication from a high credibility source (HCS). The remaining four experimental groups were exposed to the same discrepant communication except that it was from a low credibility source (LCS). The HCS and LCS groups follow the same experimental design. So only the HCS groups will be discussed, with the understanding that the LCS groups conformed to the same design. (See Table 2.)

In the HCS condition there were four experimental groups (EGs) which varied as to the number of exposures to the communication and the length of time between experimental exposures and assessments of attitude change. All the EGs and control groups (CGs) received the pretest at the same time. The first series of experimental exposures and assessment of attitude change occurred twelve weeks after the pretest. EG₁ was exposed to the discrepant communication (X₁) twelve weeks after the pretest, and measurements of attitude change (Posttest I) were made immediately following the communication. A month following the exposure to the discrepant communication and Posttest I, the subjects were administered Posttest III. EG₁ for the HCS and LCS in the LEI condition was essentially an attempt to duplicate the study by Hovland and Weiss (1951) and to determine if their results (i. e., sleeper effect) could be replicated. EG₂ received the experimental exposure to the discrepant communication twelve weeks

after the pretest, but an attitude assessment (Posttest II) was not administered until two weeks after the communication. EG₃ was exposed to the discrepant communication (X₁) twelve weeks after the pretest and was exposed to the communication (X₂) again after two weeks. Attitude measurements (Posttest II) were taken immediately following X₂. EG₄ received the discrepant communication (X₁) twelve weeks after the pretest and was exposed to it again two weeks later (X₂). Attitude measurements were taken a month after X₁, which would also be two weeks after X₂.

The three pre-post control groups for the HEI condition were not exposed to the discrepant communications; consequently, they were not in a high or low credibility source condition. The subjects in the control groups were highly ego-involved subjects who were randomly chosen from the 99 highly ego-involved subjects. CG₁ was administered Posttest I twelve weeks following the pretest. CG₂ was given Posttest II two weeks after Posttest I was administered. CG₃ was administered Posttest III four weeks after Posttest I. The posttest only control groups (CG₁*, CG₂*, CG₃*) were tested at the same time as the other control groups.

Pre-Experimental Procedures

Selection of the attitude topics for the pretest. Three of the topics for the pretest were selected from some that had been pretested by Rand (1967) at the University of Nevada and later used in his study at the University of

Oklahoma. Rand selected the topics according to the following criteria:

1. The issues must be relevant to a college population.
2. They must yield distributions of committed and non-committed subjects.
3. They must be unambiguous.
4. They must be issues for which a behavioral index could be derived (Rand, 1967, pp. 21-22).

Rand selected four topics which met the above criteria: the value of intercollegiate athletics on a college campus; the necessity for religion in living a meaningful life; the need for America's involvement in Vietnam; the place of sororities and fraternities on a college campus. The subjects for the present study came from Oklahoma Baptist University; and since the university does not have fraternities and sororities, the topic concerning them was not used. A fourth topic was selected from Sherif, Sherif and Nebergall (1965) concerning whether a democratic president and vice-president would be superior to a republican president and vice-president. The topics of main concern in this study were those on athletics, religion, and Vietnam. The political issue was not of immediate concern to this project.

The topic of religion was selected because of its salience to the university population. The topic of intercollegiate athletics was salient because during 1966-67 the university's basketball team were national basketball champions (NAIA). The topic of Vietnam was considered salient because of its daily coverage in all the mass media and its im-

plications for the graduating senior men.

The scales selected for assessment of attitudes were in agreement with the suggestions made by Sherif et al. (1965) regarding attitude scaling. Each scale consisted of nine statements with end-points that were designed to avoid a ceiling effect. Scales for athletics, religion, and Vietnam had been developed by Rand (1967). The topic of politics was assessed by a scale developed by Sherif for the 1960 election and had been carefully developed. Thus, the scales that were used in this study had been previously used and found satisfactory.

Administration of the pretest. On January 4, 1968, all the students attending the required chapel program at Oklahoma Baptist University were administered the pretest questionnaire. The questionnaire (see Appendix A) that was administered contained information for two studies. The first of the questionnaires contained questions regarding such things as name, age, sex, educational level, birth order, and two independent measures of need for achievement. This information was collected primarily for a study on birth order and need for achievement. It also provided somewhat of a mask so that the attitude questions would not stand out. The second part of the questionnaire contained the attitude scales for the present study. There were four attitude scales, one on each of the topics of athletics, politics, religion, and Vietnam. The order of the topics in the

questionnaire was fully counterbalanced. The four items were placed in all twenty-four possible orders. It was hoped that by placing the scales in all possible orders that any order effect from the subjects filling out the scales might be controlled.

Prior to the chapel exercises the proper number of questionnaires were placed at the end of each row of seats. After the opening exercises the chapel program was turned over to the experimenter. The students received the following instructions from the experimenter and were carefully taken through the questionnaire page by page.

Instructions for completing the January 4 pretest.

Will the persons at the end of each row please take a questionnaire from the stack and pass the rest down the row. If you need a pencil, please take one of those being passed down the row. Please keep the questionnaire face down and do not begin filling out the questionnaire until I give you the necessary instructions for completing each page. If you will do this, it will reduce the confusion to a minimum.

The questionnaires which are now being passed out are one segment of a large scale survey being conducted by the Institute of Group Relations at the University of Oklahoma under the directorship of Dr. W. R. Hood.

The questionnaires, in general, deal with the feelings of college students toward various contemporary issues. In today's rapidly accelerating society, research such as that being conducted at the Insititue of Group Relations can provide the information that is needed by social scientists for making inroads into some of our many societal problems. In order to provide valid data for this survey I would encourage you to answer the questions as honestly and frankly as possible.

I can assure that your answers will be confidential. Each of the questionnaires will be assigned a number in place of your name. Your number and the information that you provide will be coded onto an IBM card for analysis

by computer. The original forms with your names on them will be destroyed.

We have only a few minutes to fill out the questionnaire. So I would like to emphasize that you read and answer each question as quickly as possible. Do not spend a lot of time deliberating a question. I will tell you how much time we will spend on each page.

You may now turn your questionnaire over and fill out the first page concerning biographical information. We will spend about a minute on this page.

Turn the page.

On page two there is a twenty-four item questionnaire. Read each question as accurately and quickly as you can. Do not deliberate a question. We will spend about three minutes on this page.

Turn the page.

(The following instructions were given for each attitude.) Read each of the nine statements on the issue carefully. You will have slightly over a minute.

After reading carefully the nine statements, put the letters MA (most acceptable) next to the one statement which comes closest to your stand on this issue.

Turn the page.

On the second page you will find the same nine statements. Put a little "a" (acceptable) next to any other statement or statements which are also acceptable to you from your point of view.

Turn the page.

Reading through the statements again put the letters MO (most objectionable) next to the one statement which is most objectionable to you from your point of view.

Turn the page.

Put the letter "O" (objectionable) next to any other statement or statements which are also objectionable to you from your point of view.

Turn the page.

The next nine statements deal with a new topic. The same set of instructions was given for each of the three remaining attitude scales. The subjects were led carefully through each attitude scale a page at a time.

After the students had completed the last attitude questionnaire, the experimenter requested all questionnaires be passed to the end of the row and placed under the last seat. From the 842 questionnaires collected, 29 questionnaires had to be discarded because there was no name on the questionnaire, parts of the questionnaire had not been completed, or the person was a foreign student and was not able to complete the questionnaire properly. Eight hundred thirteen questionnaires remained after the unusable ones were discarded.

The information from the questionnaires was coded and placed on IBM cards. (See Appendix E for card format.) The attitude scale on politics was not coded onto the IBM cards because it was not used in the later posttests. The information on the three attitude scales included the most acceptable position (MA), the latitude of acceptance (LA), the most objectionable position (MO), the latitude of rejection (LR), and the latitude of noncommitment (LNC). There were three attitude scales and five different kinds of measures for each attitude, which yielded fifteen different relationships between attitudes and measurement.

The fifteen relationships are graphed in Figures 3-17.

Selection of the issues for the posttest. To test the hypotheses stated, it was necessary to select an issue which would yield a group of highly ego-involved subjects and a group of subjects low in ego involvement. Sherif has proposed that the latitude of rejection (LR) can be used as an index of ego involvement. The LR was used in the present study as the criterion for selecting ego-involved subjects. The distributions of the LR for the three issues on the pretest are found in Figures 9, 10, and 11. Additional information regarding the other measures (MA, MO, LA, and LNC) was used in the selection of an issue, and the distribution for these measures may be found in Figures 3, 4, 5, 6, 10, 11, 12, 13, 14, 15, 16, 17.

The issue of religion was chosen as the major issue of this study for several reasons. First, 78% of the men and 90% of the women accepted positions one or two on the nine-point attitude scale as being the most acceptable to them. (See Figure 4.) Second, the distribution of the LR is essentially rectilinear with about 15-25% of the men and women in each of the LRs of 2, 3, 4, 5, and 6, which accounts for 96% of the men and women. If the largest proportion of the population accepts only the first two positions on a nine-point scale as MA and then has latitudes of rejection which are relatively evenly divided from two through six scale positions, then this would indicate that many of the

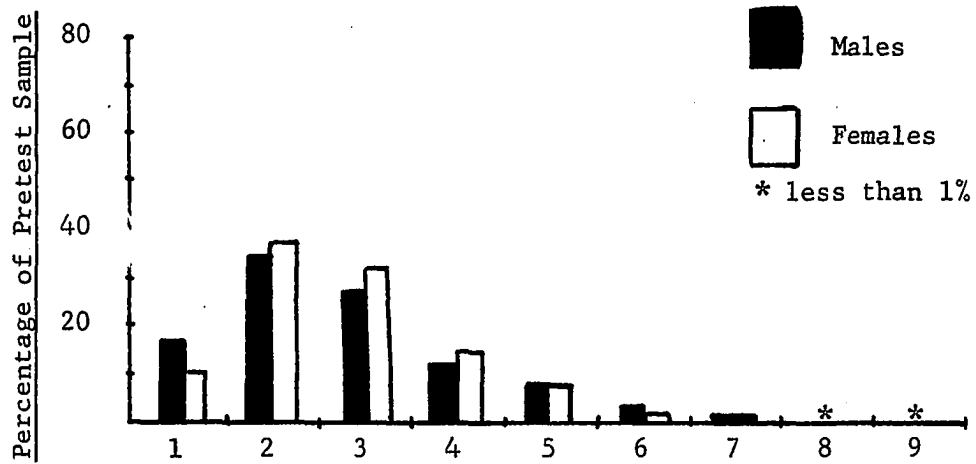


Fig. 3. Most Acceptable Position on Athletics (Pretest)

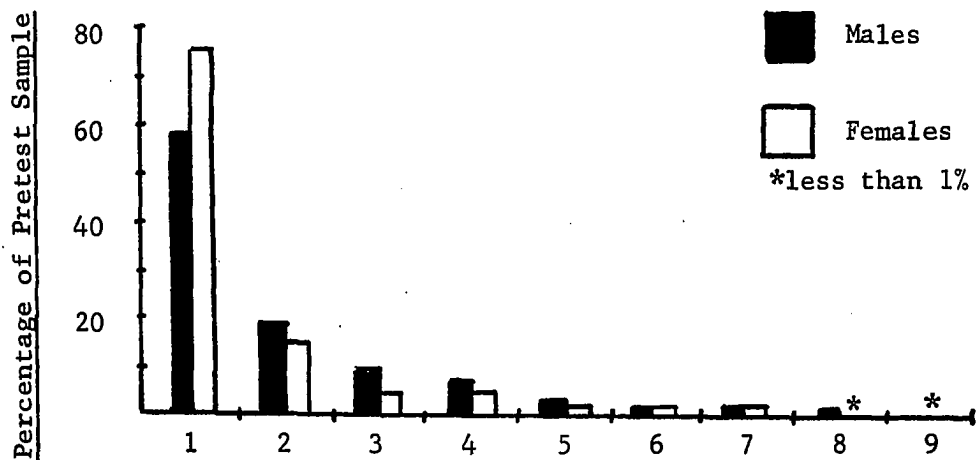


Fig. 4. Most Acceptable Position on Religion (Pretest)

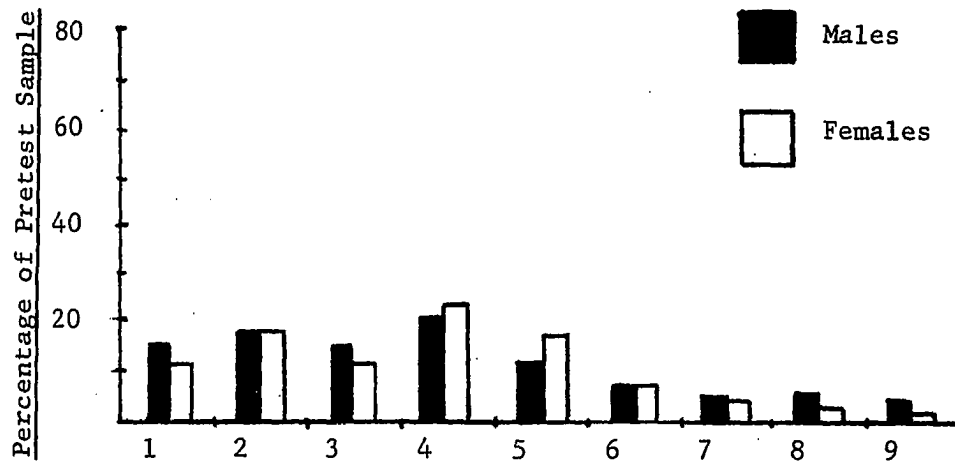


Fig. 5. Most Acceptable Position on Vietnam (Pretest)

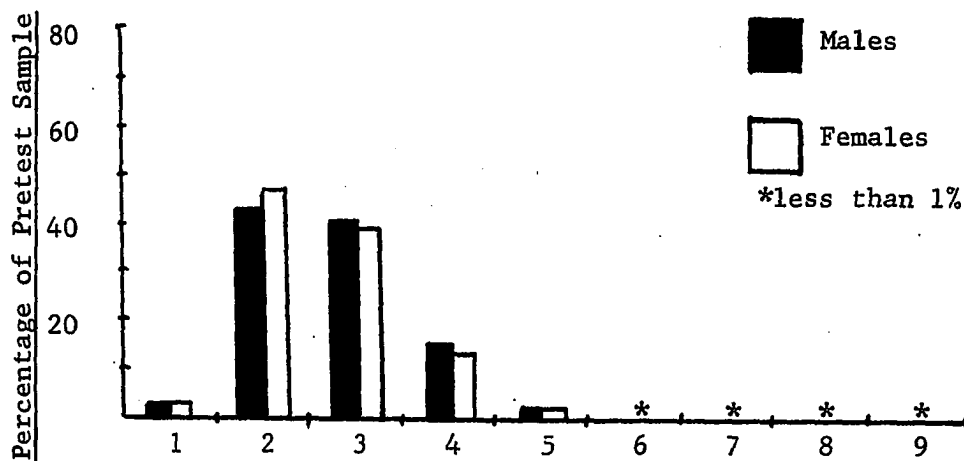


Fig. 6. Latitude of Acceptance on Athletics (Pretest)

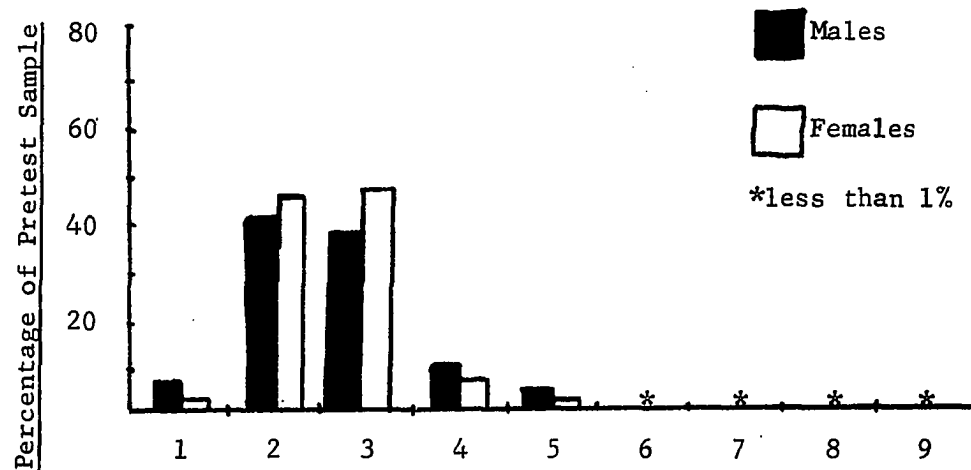


Fig. 7. Latitude of Acceptance on Religion (Pretest)

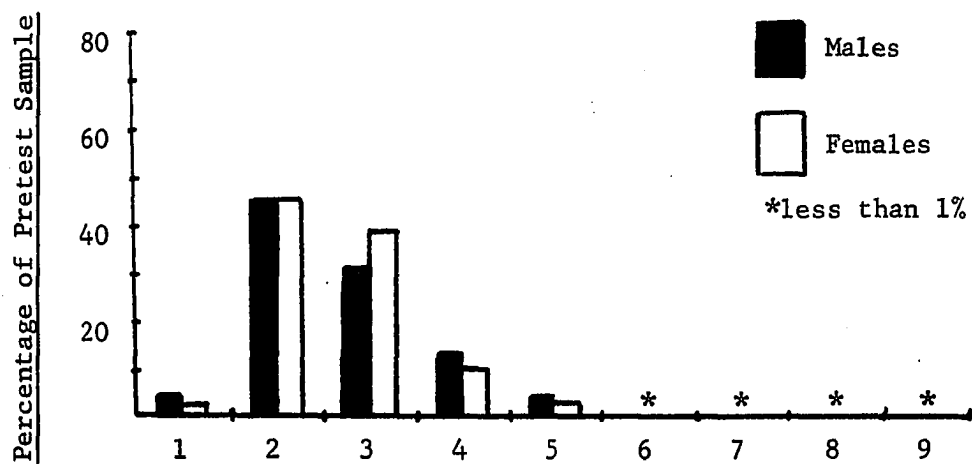


Fig. 8. Latitude of Acceptance on Vietnam (Pretest)

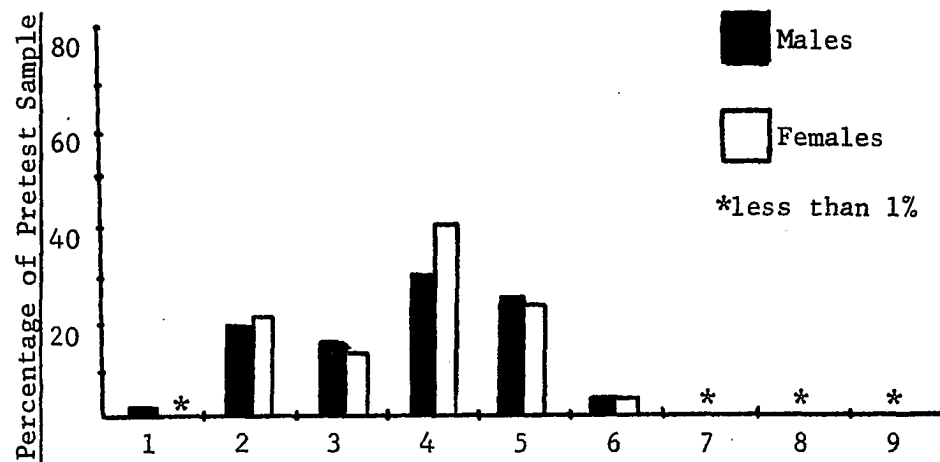


Fig. 9. Latitude of Rejection on Athletics (Pretest)

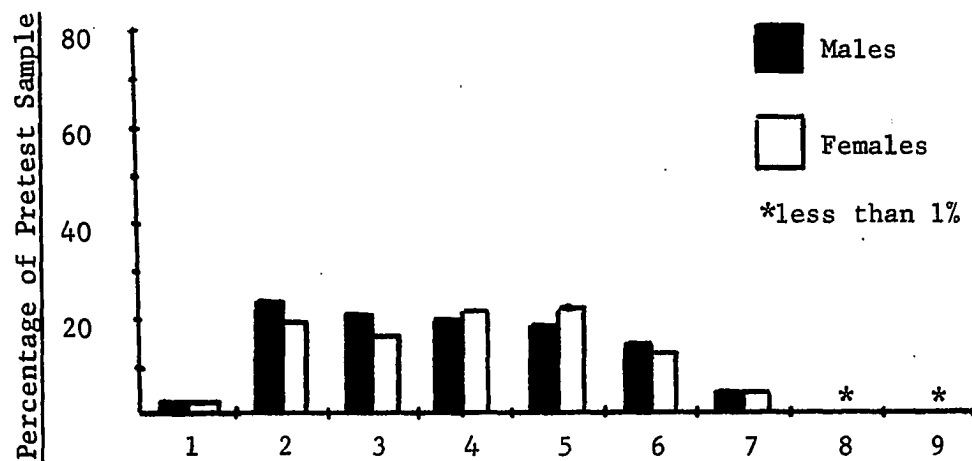


Fig. 10. Latitude of Rejection on Religion (Pretest)

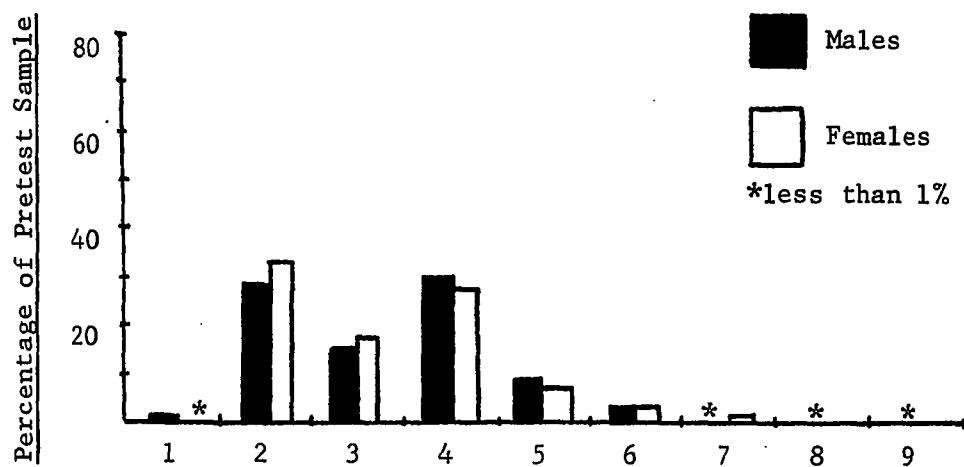


Fig. 11. Latitude of Rejection on Vietnam (Pretest)

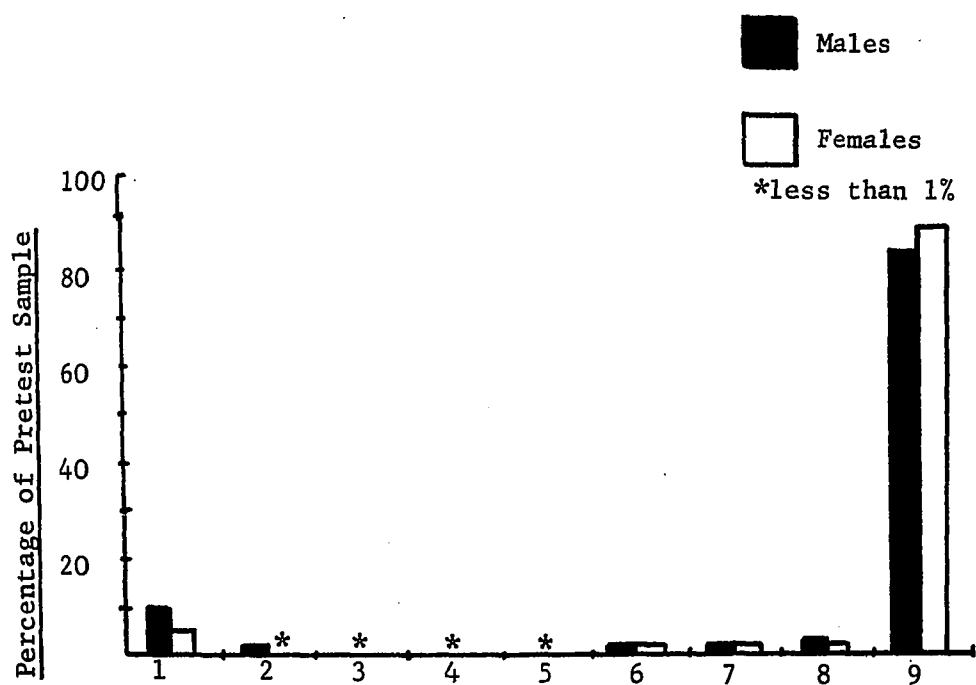


Fig. 12. Most Objectionable Position on Athletics (Pretest)

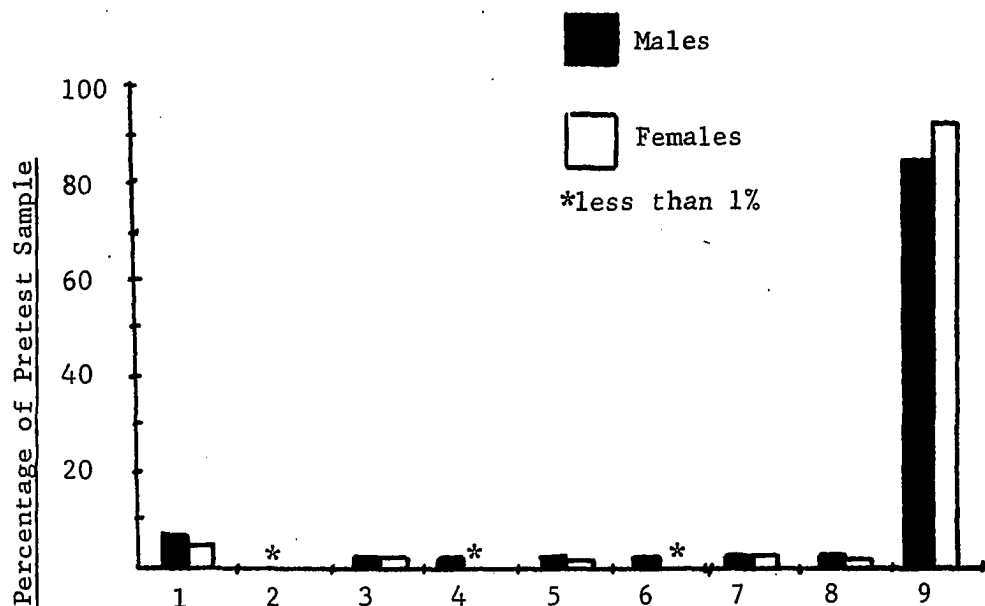


Fig. 13. Most Objectionable Position on Religion (Pretest)

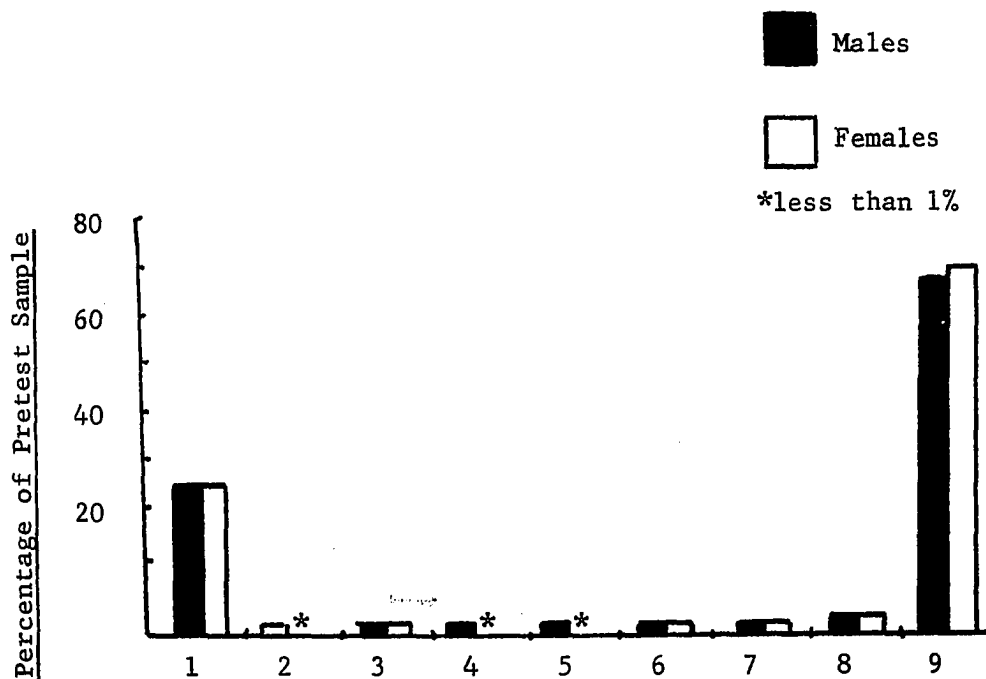


Fig. 14. Most Objectionable Position on Vietnam (Pretest)

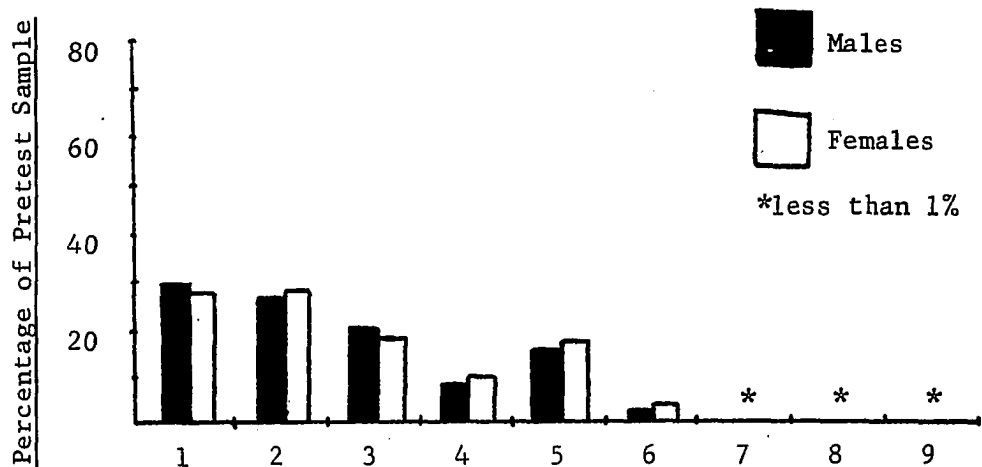


Fig. 15. Latitude of Non-Committal on Athletics (Pretest)

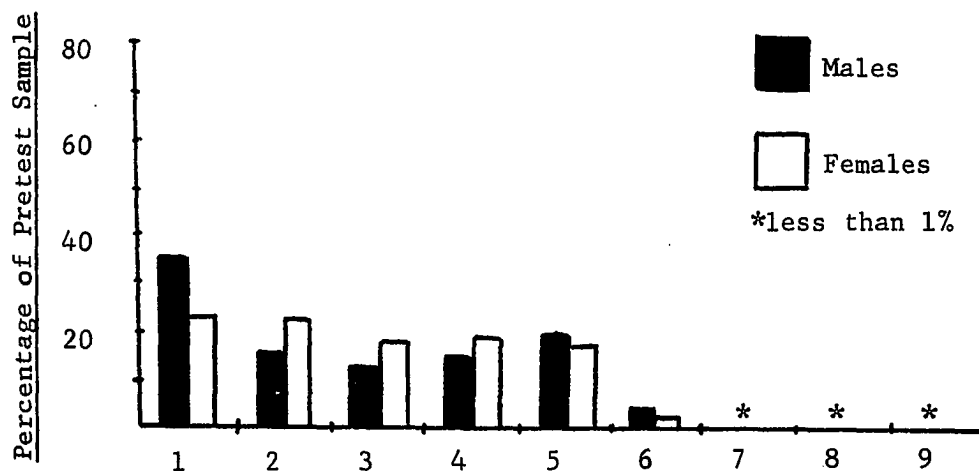


Fig. 16. Latitude of Non-Committal on Religion (Pretest)

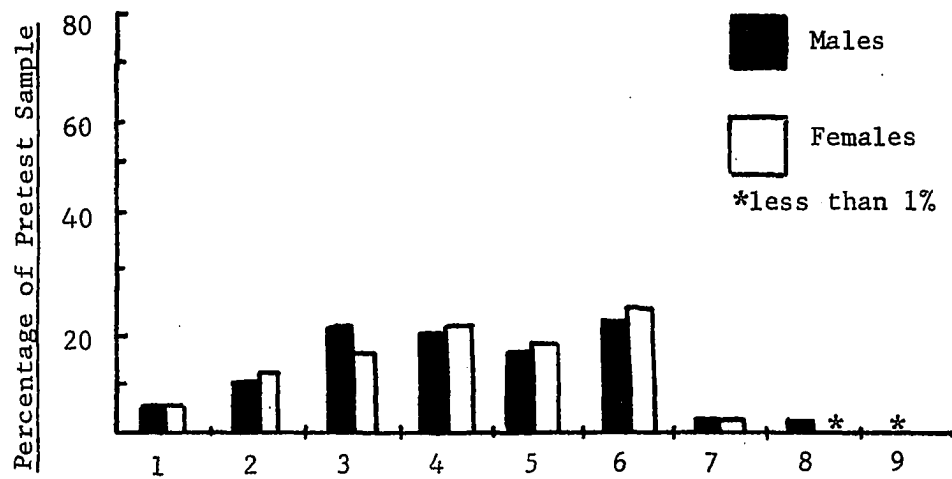


Fig. 17. Latitude of Non-Committal on Vietnam (Pretest)

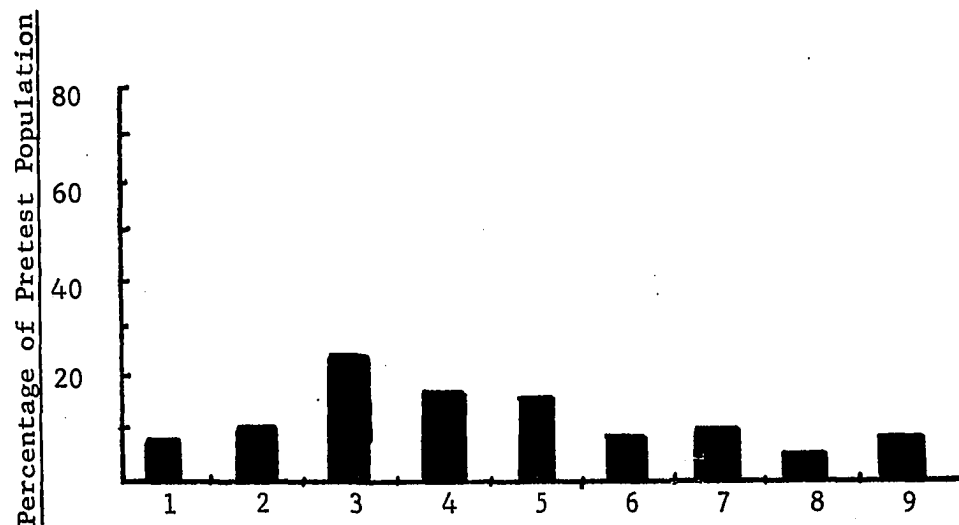


Fig. 18. Most Acceptable Position on T.V.-Radio (Control Groups)

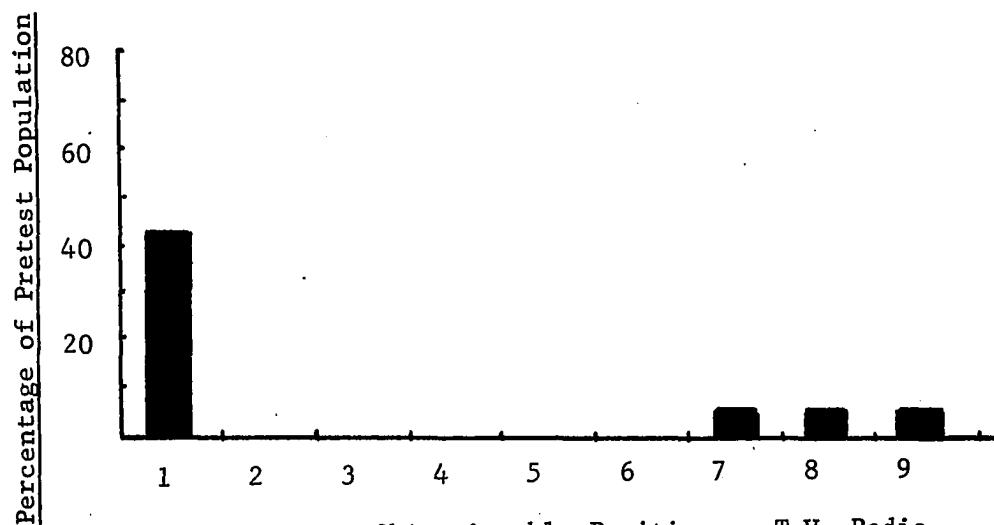


Fig. 19. Most Objectionable Position on T.V.-Radio
(Control Group)

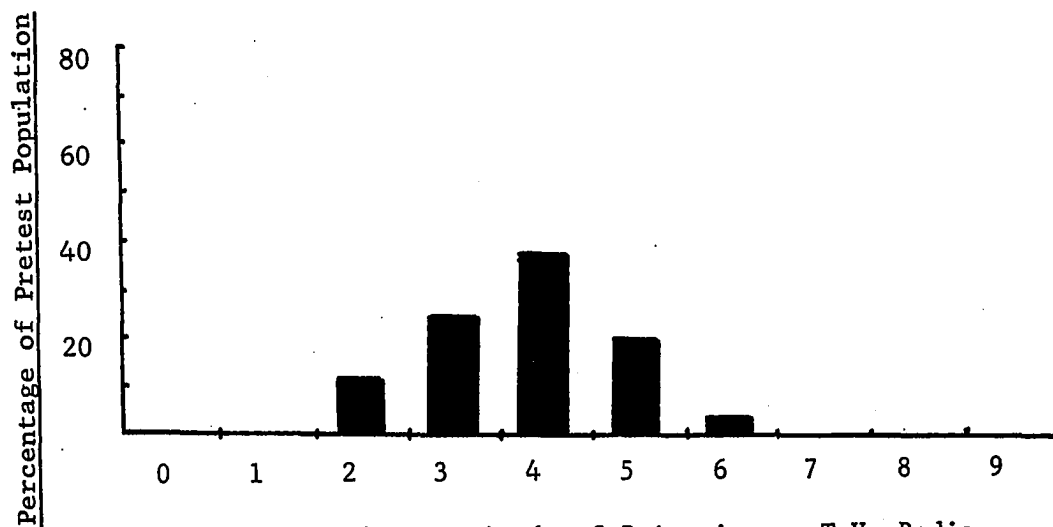


Fig. 20. Latitude of Rejection on T.V.-Radio
(Control Group)

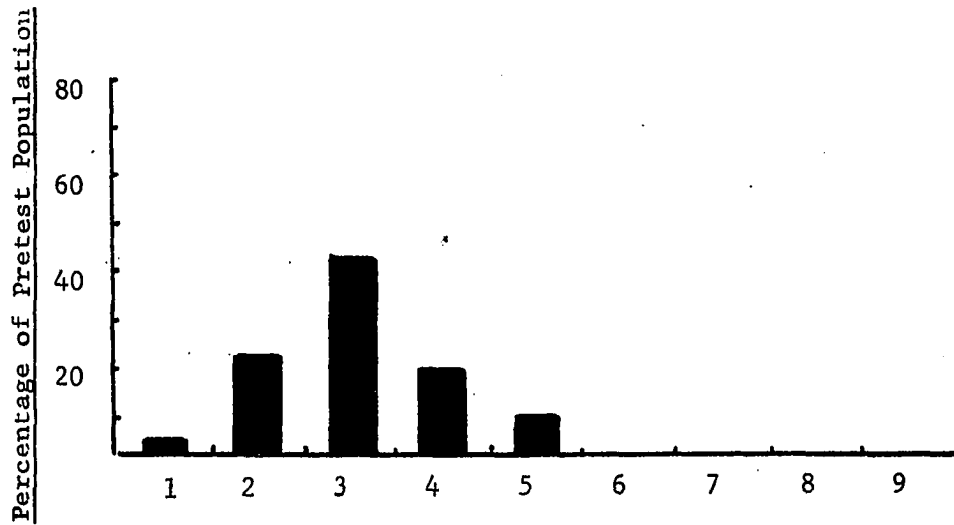


Fig. 21. Latitude of Acceptance on T.V.-Radio
(Control Group)

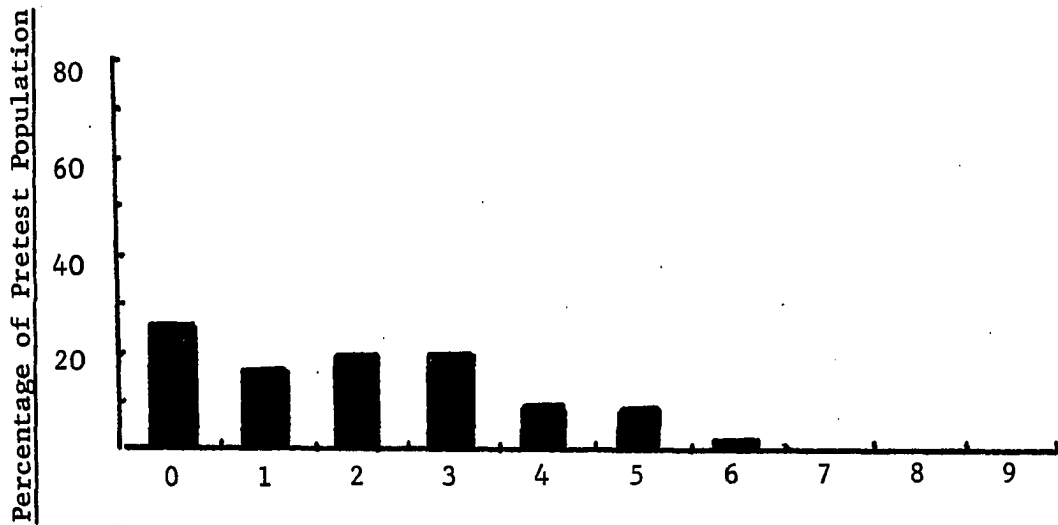


Fig. 22. Latitude of Non-committal on T.V.-Radio
(Control Group)

subjects possess the same "attitude" in terms of traditional point measures but with different degrees of ego involvement.

The topic of athletics was also included in the study and was of interest in the later analysis. It was also decided that an issue should be included in the study that lacked salience for the population, since it could assist in evaluating the hypothesis that the sleeper effect might exist only in attitude formation. Television and radio "call-in" programs was chosen as a topic lacking salience for this particular population. The television and radio call-in programs topic did not have a pretest; its evaluation consisted of a posttest-only design. The control group's judgment of the topic of television and radio call-in programs may be seen in the distribution for the MA position, MO position, LR, LA, and LNC. (See Figures 18, 19, 20, 21, and 22.)

Selection of the experimental sample. After selecting religion as the major issue, it was necessary to select the subjects for this study. In order to test the hypotheses proposed it was necessary to have two groups of subjects who differed in degree of ego involvement. One group had to be highly ego-involved, and the other group had to be low in ego involvement.

Ego involvement was operationally defined as the latitude of rejection. Sherif et al. (1965) present evidence which indicates a relationship between ego involvement and

the size of the LR. Sherif et al. (1965) indicate that the larger the LR, the greater the ego involvement, and the smaller the LR, the lower the ego involvement.

The criteria for selecting subjects for this study were twofold. First, the subject had to have a LR of either one to three or five to seven scale positions. The LR of four was not used because it was felt that the two groups should be separated by at least one scale position. The separation of the two ego-involved groups by one scale position should provide a more powerful manipulation of ego involvement. Those subjects with LRs of one to three scale positions were considered low in ego involvement, and those with LRs from five to seven scale positions were considered highly ego-involved. The second criterion was that a subject could not have a MA position exceeding five. Those subjects with MA positions of 6, 7, 8, and 9 were eliminated ($N = 26$) from the subject population ($N = 813$). The removal of these subjects left 787 subjects. The rationale for eliminating those subjects ($N = 26$) was that they were "limited" in the amount they could change their attitudes. The discrepant communication was directed toward the nine-end of the attitude scale; and the subjects (MA position 6-9) who already occupied a MA position near the nine-end of the scale would have a "ceiling" imposed on their attitude changes. The selection of subjects with MA positions of one through five partially eliminated a ceiling effect. Thus, all the sub-

jects ($N = 198$) in the main study had MA scale positions of one through five and were either highly ego-involved (LR of 5 to 7) or low in ego involvement (LR of 1 to 3).

The main sample ($N = 638$, excluding only those subjects with a LR of four) was sorted into an HEI group and an LEI group, and a "t" test was performed on the MA scale scores. The mean for the HEI group was 1.23, and the variance was .31. The mean for the LEI group was 2.16, and the variance was 2.9. The two groups were significantly different ($t = 9.6$, $p < .001$). The difference between the two groups is consistent with Sherif's conceptual framework. The HEI group had a mean and variance ($\bar{X} = 1.23$; $s^2 = .31$) which indicated that the subjects in this group closely adhered to the strongly favorable statements of one and two. On the attitude scale the first statement said, "To live a meaningful life, I feel it is absolutely essential for me to believe in a religion," and the second attitude statement said, "To live a meaningful life, I feel it is essential for me to believe in a religion." The LEI group had a mean and variance ($\bar{X} = 2.16$; $s^2 = 2.9$) which indicated that the extreme attitude positions of one and two were not closely held.

When the subjects with MA attitude scale positions of 6-9 and those with an LR of four were eliminated, there were 583 subjects remaining to serve as a subject population for the present study. The subjects with MA scale positions

of 1-5 were sorted into two groups, HEI (LR 5-7) and LEI (LR 1-3), and a "t" test was used to compare the MA positions of the two groups of subjects. The HEI ($\bar{X} = 1.23$; $s^2 = .31$) and the LEI ($\bar{X} = 1.85$; $s^2 = 1.37$) were again significantly different ($t = 8.27$, $p < .001$).

The final experimental group for this study consisted of 198 subjects. The HEI group had 289 subjects, and from this group 99 subjects were randomly selected to serve as subjects in the HEI experimental conditions. The LEI group had 294 subjects, and 99 of these were randomly chosen to be subjects in the LEI experimental conditions.

The students selected to be subjects in the experiment were initially contacted by telephone. The telephone conversation was essentially the same for all subjects.

Telephone contact: Hello, this is _____ from the Journalism Department. You may or may not have heard that the Journalism Department is participating in a rather large-scale evaluation project. The Oklahoma project includes O. S. U., O. U., and six smaller colleges. O. B. U. has been chosen to be one of the six smaller colleges. The evaluation project deals with the articles that appear in school newspapers and the students' judgment of these articles. The project is under the auspices of National Journalism Association (N. J. A.) and will probably have a large impact on the content and emphasis of school newspapers.

We would like for you to assist us in the evaluation project being conducted on this campus. We need students to read some newspaper articles and give us their judgment and opinions of the articles. The reading and evaluation will require about one hour. Will you participate in the project? (If the reply is no, they are thanked and their name is recorded. If the students replied that they would participate, they were given the following reminders:)

Be sure that you come to the room at the time that we agree upon, because we are asking only a certain number of students to participate, and if you are late or absent it will adversely affect the results of the project. The room you are to go to is Shawnee Hall _____. You have a choice of times; ____, ____, ____, for ____ (date) _____. Which of these times is most convenient for you? O. K., it is agreed that you will be at Shawnee Hall at ____ (time) on ____ (date) _____. If you have a calendar or a piece of paper handy, you might jot the time and place down. We will also drop you a postcard the day before you are to come.

Thank you very much for consenting to participate in the study.

If a student did not consent to be in the study, another person was randomly chosen and contacted.

The second contact with the subject was by means of a postcard or a letter which was received by the subjects the day prior to their participation in the experiment.

The postcard or letter said:

Dear _____:

This is to remind you of the evaluation project being conducted by the Journalism Department. You agreed to be at Shawnee Hall at ____ (time) on ____ (date) _____. We very much appreciate your cooperation in the study. We feel that the findings will be a contribution to the field of journalism.

Preparing the communications. After selection of the major issue and the other issues that were to be used in the remainder of the study, consideration was given to the discrepant communications for each of the issues. Each of the discrepant communications had to be written so that they could have originated from a highly credible source or from a low credibility source. The message itself had to be credible and presented in a media that would allow a

manipulation of the credibility of the source. The University of Oklahoma school newspaper was selected because articles presented in the paper vary from articles written by outstanding men containing valid and reliable information, to articles written by undergraduates with personal motives uppermost. The Oklahoma Daily was known to the student body at Oklahoma Baptist University and would be accepted as a legitimate source. The study was purported to be a study being conducted by the Journalism Department at Oklahoma Baptist University in cooperation with the School of Journalism at the University of Oklahoma in order to avoid the reactions of the subjects to participating in a "psychological experiment."

The communication on religion was based on an article published by Milton Rokeach in the journal Transaction (1965). The purpose of the communication as it was used in this study was to discredit dogmatism. The communication indicated that many religious individuals were anti-humanitarian, bigoted, and overly anxious. It was pointed out, however, that there were two types of religious persons, the extrinsic and the intrinsic. The extrinsic person was closed to others' thoughts and beliefs, while the intrinsic person was one who was open to and accepting of the beliefs of others.

The credibility of the source of the communication was varied by crediting the articles to different individuals.

One form of the religious communication was purportedly written by a Dr. Kenneth Williams, who was intended to be a high credibility source. The low credibility source was David Stevens, an undergraduate at the University of Oklahoma, and this composed the second form of the religious communication. Both the forms for the high and low credibility sources were the same except for the introduction of each of the authors. (See Appendix B.)

The communication on intercollegiate athletics was based on a communication developed by Rand (1967). The article on athletics presented a strong argument against intercollegiate athletics. It contained frequent quotes referring to empirical findings that demonstrated the damage that intercollegiate athletics caused to individuals and universities. The high credibility form was purportedly authored by Dr. William MacInree, Dean of Social Sciences at John Hopkins University. The low credibility form was supposedly authored by Jim Taylor, a senior at the University of Oklahoma, majoring in English. (See Appendix B.)

The article on television and radio "call-in" programs was based on an article by Robert Lewis Shayon in the magazine Saturday Review, February 24, 1968. The article pointed out how some radio stations were failing to present both points of view. The situation had become so bad in some communities that the radio programs were dominated by right-wing extremists who used the station as a vehicle for their own

ideologies. The author suggested that the citizens of the communities should accept the responsibility of watching their radio stations just as they watch their schools and health departments. The high credibility form of the communication was supposedly written by Dr. James Wiley, who was a professor of communications at the University of Chicago. The article was supposedly based on his findings from a three-year Ford Foundation grant. Russell Johnson, a senior at the University of Oklahoma, majoring in speech and radio broadcasting, was the low credibility source who was supposed to have written the article. (See Appendix B for each of these forms.)

The three articles were placed in specially reproduced pages of the Oklahoma Daily. Two sets of questionnaires had to be used since half of the questionnaires contained the three high credibility sources, and half the questionnaires contained the three low credibility sources.

Administration of the Communications and the Posttests

The administration of the communications and posttests conforms to the general design that has previously been discussed. Reference to Table 1 will be helpful in following the administration procedures.

Several of the experimental groups were combined because the experimental procedures for them were the same. By combining the various experimental groups, it was possible to have only ten group meetings. The combining of the ex-

perimental and control groups is summarized in Table 3.

The three experimental sessions are referred to as Posttest I, Posttest II, and Posttest III. Posttest I was conducted twelve weeks after the pretest. Posttest II was conducted two weeks after Posttest I. Posttest III was conducted two weeks after Posttest II.

The experimental groups (EGs 1, 2, 3, 4) in Posttest I received the following instructions.

Group introduction.

Well, it looks like it is about time to start. Mr. _____ is not able to be here, so _____ and I have agreed to assist him. If you will cooperate with me we should be able to complete this in the shortest amount of time possible.

Before handing out the materials, Mr. _____ asked that I remind you about the study. The study being conducted at O. B. U. is only one out of eight being conducted in Oklahoma. O. U. and O. S. U. and six smaller colleges are the Oklahoma participants. This study is also being conducted in other states. The National Journalism Association (N. J. A.) is coordinating all the different projects. These studies should provide some valid information about student judgment of school newspaper articles. All you are asked to do is to respond honestly and frankly to each of the articles you read.

The articles in the booklet you are receiving are from the Oklahoma Daily, the University of Oklahoma's newspaper. You will be asked to read each article and then evaluate it.

The order of the articles was fixed: intercollegiate athletics, religion, and television and radio control. The first article was introduced with the following instructions:

If you will look at the first page of your booklet you will see an article on athletics. Read the article very carefully, because you will be asked to evaluate its contents and its author.

Table 3
Combining Experimental Groups

Posttest	Group Meeting	Group & Condition
I	1	EGs 2, 3, 4, HCS
I	2	EGs 2, 3, 4, LCS
I	3	EG ₁ , HCS
I	4	EG ₁ , LCS
I	5	CG ₁ , HCS, LCS
II	6	EG ₂ , HCS, LCS
II	7	EG ₃ , HCS, LCS
II	8	EG ₄ , HCS, LCS
II	9	CG ₂ , HCS, LCS
III	10	EGs 1, 2, 3, 4 for HCS, LCS CG ₃ , HCS, LCS

(EGs 2, 3, and
CGs 1, 2, were
only included in
the debriefing)

Experimental groups 2, 3, and 4 only read the newspaper articles and were given a simple questionnaire on which they evaluated the article. (See Appendix B.) They were then thanked for their cooperation and dismissed. Experimental group 1, however, received an extended questionnaire following the reading of each article. The instructions which follow are related only to EG₁ in Posttest I.

After reading the first article, the subjects in EG₁ were asked to turn the pages in their questionnaires and read the nine statements dealing with intercollegiate athletics. (See Appendix C.) They were instructed on how to fill out the attitude scale, and it was emphasized that they were to evaluate the statements and make their own judgments. The instructions given were:

Read each of the nine statements dealing with intercollegiate athletics very carefully before putting any mark on your paper. Keep in mind that you are trying to evaluate and judge the article from your own point of view. When you have carefully read each of the statements, put the letters MA next to the position which would be most acceptable to you. Now consider all the statements that would be acceptable to you. Place an A beside each statement that you feel would be acceptable to you from your point of view. Of all the statements, which one would be the most objectionable to you? Put the letters MO next to that one statement. Now consider all the statements and mark those which you would find objectionable. Put the letter O beside all the statements that you would find objectionable.

When the subjects had finished filling out their attitude questionnaires, they were asked to turn the page and fill out a series of scales (semantic differentials) on the author and on the message. The instructions given were

standard instructions for filling out the semantic differential. (See Appendix C for the instructions and scales.) The semantic differential scale on the author consisted of twelve scales which were derived from a factor analysis that yielded two factors, authoritativeness and character. Six of the scales measured the authoritativeness of the author and dealt with factors such as his being reliable, informed, qualified, intelligent, valuable, and expert. The other six scales dealt with the author's character and measured such qualities as the author's being honest, friendly, pleasant, unselfish, nice, and virtuous. The communication was evaluated by means of seven semantic differential scales. The seven scales asked if the message was fair, reasonable, well-written, unbiased, factual, logical, and correct.

After completing the semantic differential scales on the author and his article, the subjects were asked to turn the page in the booklet. The attitude scale on this page was the same nine-point scale that they had completed for their own attitude. They were instructed to respond to the questionnaire as they felt the author would. The instructions given were:

Read each of the nine statements dealing with intercollegiate athletics very carefully before putting any mark on your paper. Keep in mind that you are trying to respond just as the author would. When you have carefully read each of the statements, put the letters MA next to the position which would be most acceptable to the author. Now consider all the statements that would be acceptable to the author. Place an A beside each statement that you feel would be acceptable to the author. Of all the statements,

which one would be the most objectionable to the author? Put the letters MO next to that one statement. Now consider all the statements and mark those which the author would find objectionable. Put the letter O beside all the statements that the author would find objectionable.

The same procedure was used for the two remaining articles.
(See Appendix C.)

The next two pages of the booklet dealt with how strongly the subjects felt about the four attitude topics and how important they were to them. (See Appendix C.)

The following three pages of the booklet involved the subjects' behavioral commitment to athletics, religion, and television and radio "call-in" programs. (See Appendix C.)

The page on athletics asked four questions: (1) Are you actively involved in any formal sports activities? (2) Are you actively involved in any informal sports activities? (3) Indicate what kind of sports activities you attend as a fan, as well as the average number of hours per week. (4) How many hours a week do you watch or listen to sports activities on the television or radio? Each of these questions asked the subjects to specify the activities in which he participated and the hours per week that he devoted.

The behavioral commitment questions involving religion were on the following page, and questions were asked such as: (1) What is your religion? (2) How do you classify that religion? (3) How often do you attend church services? (4) To what extent do you participate in church activities

other than church services?

The behavioral commitment to television and radio "call-in" programs also contained four questions: (1) How committed are you to your stand on television and radio "call-in" programs? This would involve how often you express your views to other people and how clear you have made your stand to them. (2) How much time do you spend in an average day thinking or talking about television and radio "call-in" programs. (3) Are you involved in any community or campus groups which have a stand on television and radio "call-in" programs? (4) How many hours a week do you spend listening to television and radio "call-in" programs?

After completing the behavioral commitment forms, the subjects in EG₁ were thanked for their cooperation and dismissed.

The control group (CG₁) in Posttest I was told the following:

Well, it looks like it is about time to start. Mr. _____ is not able to be here, so _____ and I have agreed to assist him. If you will cooperate with me we should be able to complete this in the shortest amount of time possible.

Before handing out the materials, Mr. _____ asked that I remind you about the study. The study being conducted at O. B. U. is only one out of the eight being conducted in Oklahoma. O. U., O. S. U. and six smaller colleges are the Oklahoma participants. This study is also being conducted in other states. The National Journalism Association (N. J. A.) is coordinating all the different projects. These studies should provide some valid information about student opinions. All you are asked to do is to respond honestly and frankly to each of the questionnaires. We will now pass out the booklets; please do not open them until you are instructed to do so.

After the booklets had been passed out the subjects were told to open the booklets. The instructions regarding how to fill out each attitude scale were essentially the same as those used in the EG₁ instructions. The booklet completed by CG₁ contained the three attitude scales, the measure of attitude intensity, the measure of the importance of the attitudes, and the measure of behavioral commitment.

Posttest II occurred two weeks after Posttest I. All the subjects in EGs 2, 3, and 4 were contacted and asked to fill out some additional forms for the journalism study. The subjects in CG₂ were contacted and asked to participate in the study.

The subjects in EG₂ were told that since they had to fill out the questionnaires, they might as well be given the best set of questionnaires. The questionnaire booklet that they were given was the same extensive questionnaire that EG₁ had filled out immediately after reading the articles, except they were not exposed to the articles. (See Appendix C.) The instructions they were given on how to complete the booklet were the same as those for EG₁. On each of the three issues the subjects filled out an attitude scale on their own attitudes, evaluated the author and article, and filled out an attitude scale for the author. They filled out questionnaires as to the strength of their attitudes and how important these three issues were to them. They also filled out the questions on behavioral commitment.

In addition to the booklet filled out by EG₁, EG₂ filled out another booklet. The second group of questionnaires contained a retention questionnaire, some personality questionnaires, and an awareness questionnaire. (See Appendix D.) The personality variables were dogmatism and self-esteem, and the questionnaires for these are in Appendix D. The retention questionnaire was composed of multiple choice questions regarding the source of the article itself. (See Appendix D.)

At the conclusion of the posttest the examiner administered an awareness questionnaire to the subjects. The questions were asked in serial order, and the subjects wrote their answers in rectangular boxes numbered from one to six. (See Appendix D.) These questions were asked in order to ascertain some of the demand characteristics of the study.

The procedure and instructions for group meeting 7 which contained EG₃ were the same as group meeting 6 for EG₂, except that the subjects were given the newspaper articles again. The subjects were given the newspapers before filling out the booklets and were asked to read each of the articles. The articles were reread, and the testing procedure then conformed to that of group meeting 6.

Those subjects in EG₄ reread the articles and filled out the short questionnaire. (See Appendix B.) The important factor was they they were re-exposed to the articles.

Control group 2, group meeting 9, was administered the

attitude questionnaires and other measures and given the same instructions as CG₁.

Posttest III consisted of administering both of the posttest booklets (Appendixes C and D) to EGs 1 and 4 and CG₃, but they were not exposed to the articles. The booklets requested for each of the three issues the subjects' attitudes, and evaluation of the author and communication, the attitude of the author, the strength and importance of the issue, and the behavioral commitment of the subject to each issue. The subjects completed two personality questionnaires, one on dogmatism and another on self-esteem. The two personality measures were included for the generation of future research. A measure of dogmatism was obtained from a short-form dogmatism scale developed by Troidahl and Powell (1965). Dogmatism has been related to situational involvement by Miller (1965), and he found that dogmatism and involvement reduced a subjects' persuasiveness. Self-esteem was the other personality variable included, and the questionnaire for it was developed by Janis and Field (1959). The subjects also answered a series of multiple choice questions intended to assess their retention of the author and message content. They were then given the awareness questionnaires.

After everyone had finished, EGs 2 and 3 and CGs 1 and 2 were allowed into the room. The subjects in EGs 2 and 3 and CGs 1 and 2 had been contacted and asked to arrive at

the room one hour after the subjects in group meeting 10 arrived. All the subjects present were debriefed regarding the experimental procedures, and all questions were answered. A letter was then sent to each subject in case some had not been able to attend the debriefing session.

CHAPTER III

RESULTS

The data from the pretest questionnaire were coded and placed on IBM cards. Each subject was given a three-digit number which served as his subject number for the remainder of the experiment. Demographic data obtained from the pretest questionnaire as well as two independent measures of achievement motivation were coded and placed on the card. The subjects' responses to each of the attitude scales were coded into the following five categories: most acceptable position (MA); latitude of acceptance (LA); most objectionable position (MO); latitude of rejection (LR); and latitude of noncommitment (LNC).

The attitude scales used had nine statements ranging from A through I. For scoring purposes the attitude scale was treated as a nine-point scale with A as one and I as nine. The MA statement and the MO statement were coded according to the numerical value of the particular statement. The LA is a frequency score and was obtained by counting the number of statements designated as acceptable, including the MA statement. The LR is also a frequency score and was obtained by counting the number of responses designated by the

subject as objectionable, including the MO. The LNC was obtained by summing the LA and LR and subtracting the sum from nine. For example, if a subject chose statement C as the one statement that was MA and also accepted statements A, B, and D, then the location of his MA position would be 3, and his LA would be 4. If the MO statement to him was I, and he also objected to statements F, G, and H, then the location of his MO statement would be 9, and his LR would be 4. The LA (4) plus the LR (4) minus the total number of statements (9) would give a LNC of (1).

Subjects randomly chosen from the pretest population to participate in the study were placed into different experimental and control conditions, which were described in the methodology. The last six columns of each IBM card contained the code that permitted the experimenter to identify the experimental or control condition of each subject.

As described in the methodology, Posttest I occurred 12 weeks after the pretest. Experimental groups 2, 3, and 4 read the three newspaper articles and filled out a short questionnaire (see Appendix B). The short questionnaire contained twelve seven-point scales on which the subjects evaluated each of the newspaper articles they had read. On each seven-point scale in the present study, a rating of (1) will be considered the lowest rating, and a (7) the highest rating. Each article was rated on how well-written (1-7) and how correct (1-7) it was. The subjects also evaluated the author of the article

in terms of the author's expertness and honesty (1-7).

Experimental group 1 in Posttest I consisted of the subjects' reading each of the three articles and completing an extensive questionnaire (see Appendix B). The subjects filled out an attitude scale indicating their positions on religion, intercollegiate athletics, and TV-radio call-in programs. The procedure for scoring the attitude scales was the same as in the pretest.

The character and authoritativeness of the author of each article were evaluated by means of twelve semantic differential scales. Each of the six scales relating to the character of the author had a range of 1 to 7, and the sum of these six scales was used as a measure of the character of the author. The sum of the six scales (1-7) on authoritativeness was used as a measure of the authoritativeness of the author. The article was rated by the subjects on seven scales with a range of 1 to 7. The sum of the seven scales was used as an index of the subjects' perception of the article. The subjects' perception of the author was assessed by having the subjects estimate how the authors of the articles would respond if the authors themselves were completing the attitude scales. Their responses were coded in the same manner as the subjects' attitude scales on the pretest.

The strength or intensity of the attitude was measured by having the subject rate on a seven-point scale how strongly he felt about each of the three issues employed in the study.

The value (7) was assigned to the category "very strongly," while the value (1) was assigned to the category "very weakly." The importance scale contained ten items; however, only the items dealing with intercollegiate athletics, religion, and TV and radio programs were recorded. The category "not at all important" was given a rating of (1), and the category of "extremely important" was given a rating of (7).

An index of behavioral commitment was obtained from a questionnaire for each of the three issues (see Appendix C). The behavioral commitment questionnaire for athletics contained four questions which asked for the number of hours spent in activities related to athletics. The maximum number of hours given for any one question was nine so that the total number of hours varied from 0 to 36.

The behavioral commitment questionnaire for religion contained four questions; however, only the last two questions were used to obtain an index. Question three asked, "How often do you attend church services?", and the subjects responded by checking one of the eight alternatives. A rating of (1) was assigned to the first alternative of "never," and the other alternatives were numbered consecutively through the final alternative of "more than once a week," which was assigned a rating of (8). The fourth question asked, "To what extent do you participate in church activities other than church services?" There were five alternatives to the question, ranging from "not at all" to "very regularly."

These alternatives were assigned ratings of 1 to 5, respectively. The sum of the ratings for questions three and four ranged from 2 to 13 and served as an index of behavioral commitment for religion.

The questionnaire on the behavioral commitment to television and radio programs contained four questions, but only the last two were used in determining the degree of behavioral commitment. Questions three and four requested the number of hours spent on television and radio call-in programs. The sum of the hours designated in questions three and four served as an index of behavioral commitment to television and radio call-in programs.

Posttest II occurred two weeks after Posttest I, and questionnaires were given to EGs 2, 3, and 4. Experimental group 4 was given the three articles to re-read and evaluate on the short questionnaire (see Appendix B). The procedure for scoring the short questionnaire was the same as in Posttest I. Experimental groups 2 and 3 filled out the same questionnaire as EG₁ in Posttest I, and it was scored in the same manner. However, they also responded to an additional questionnaire (see Appendix D). The retention questionnaire contained six multiple choice questions on each of the three articles. Each article had three questions on the author and three questions on the content of the article. The questions were scored by counting a correct answer as (1) and an incorrect answer as (0), which made it possible to have a retention score of 0 to 3 on both the content and source of the article.

Scales on self-esteem and dogmatism were included in the questionnaire, but they were for the generation of future research and will not be included in this analysis.

The degree to which the subjects were aware of the purpose of the study was assessed by asking six open-ended questions at the end of the posttest (see Appendix D). The answers to each of the questions were written in six boxes provided in the posttest questionnaire. If the subject responded to question one by stating that the purpose of the experiment was "to see how the articles would change his attitude" or "to see how he reacted to the articles," then his response was scored as (1). If on questions 2, 3, 4, or 5 the subject stated that the purpose of the experiment was, in some way, to affect his attitudes, then he was given a score corresponding to the question that elicited the response. If the subject did not state the purpose of the experiment or stated that he "did not know," then he was scored as (6).

Posttest III occurred two weeks after Posttest II and consisted of administering the questionnaires from Appendixes C and D to EGs 1 and 4. The scoring of these questionnaires was the same as the questionnaires for EG₂ in Posttest II.

The control groups for Posttests I, II, and III were administered questionnaires at the same time as the experimental groups. The control questionnaires (Appendix C) contained attitude scales for the assessment of the subjects' attitudes on each of the issues, measures of behavioral com-

mitment to each of the issues, and measures of attitude intensity and importance. The scales in the control questionnaire were scored in the same manner as the experimental scales.

The present study measured attitude change three different ways. First, a measure of "attitude change (MA)" was obtained by subtracting the subjects' MA positions on the pretest from the MA positions on a posttest. Attitude change (MA) was an absolute value which indicated change in the MA position regardless of the direction of the change. Second, a measure of "attitude change toward the communication" was obtained by taking into account the sign of the difference between the pretest MA position and posttest MA position. For the issues of religion and intercollegiate athletics a positive difference between pretest and posttest indicated a move toward the communication, since the communication was directed at the nine-end of the attitude scale. For the issue of TV and radio call-in programs, a negative difference between the pretest MA position and posttest MA position indicated a move toward the communication, since the communication was directed toward the one-end of the attitude scale. Third, an "index of attitude change" was obtained by subtracting the subjects' MA, LA, MO, LR, and LNC scores on the pretest from their respective MA, LA, MO, LR, and LNC scores on a posttest. This index of attitude change consisted of the sum of the absolute values of the differences obtained for the MA, LA, MO, LR, and LNC. Caution should be employed in interpreting the index

of attitude change since the index measures both positive and negative reactions to the communication. Since the issue of TV and radio call-in programs did not have a pretest measure, the control group means were used. The mean scores that were used for the pretest on TV and radio call-in programs were: MA, 4.0; IA, 3.0; MO, 5.0; LR, 4.0; LNC, 2.0.

Ego Involvement and the Sleeper Effect

The primary concern of the present study was to investigate the relationship between ego involvement, salience of the issue, and the attitude change phenomenon referred to as a sleeper effect. Posttest I and Posttest III for experimental condition 1 provided the proper design for the detection of a sleeper effect (see Table 1, p. 43).

The relationship between the retention of attitude change and source credibility for the issue of intercollegiate athletics did not indicate the presence of a sleeper effect on any of the three measures of attitude change (see Figure 23). The only noticeable trend was for the attitude change in both HCS and LCS conditions to decay as the four weeks passed. The relationship between retention of attitude change and source credibility for the issue of religion was graphed to indicate the ego involvement of the subjects for each level of source credibility (see Figure 24). There is no indication of a sleeper effect occurring on any of the three measures of attitude change. In fact, the stability of the attitude change over time is conspicuously different from the

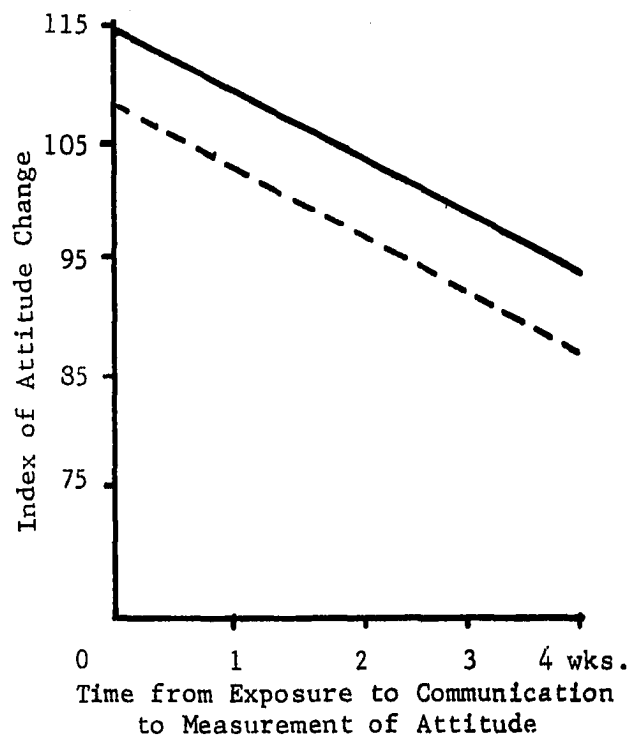
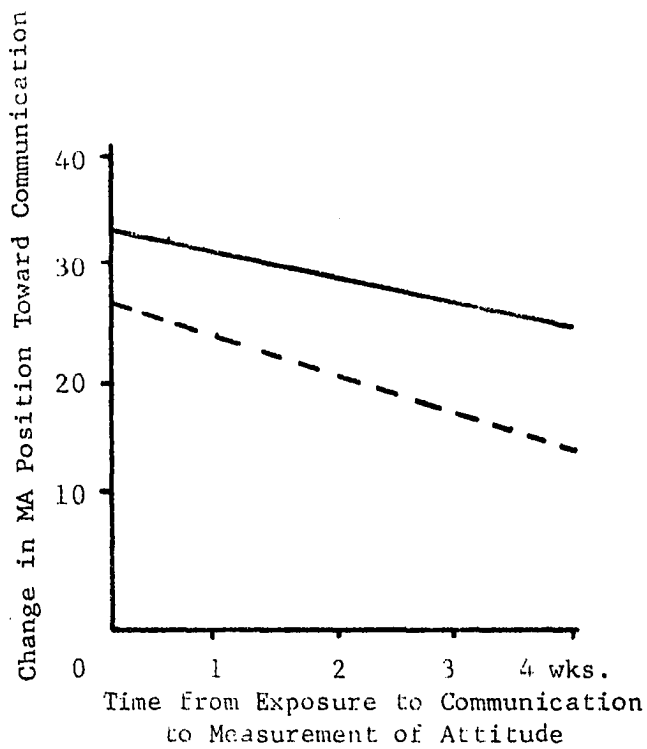
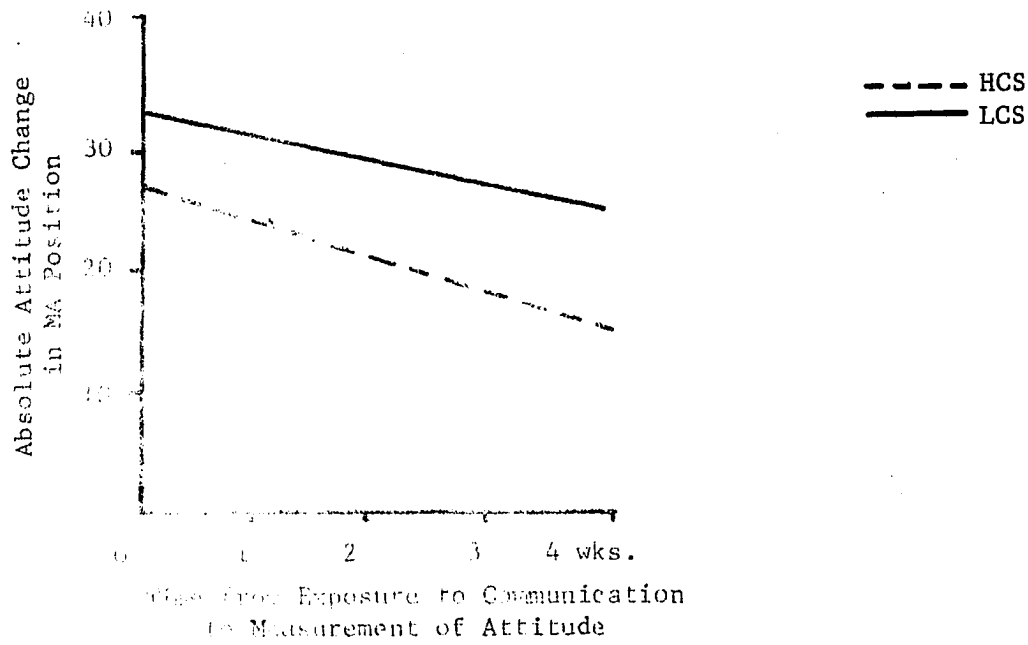


Fig. 23. Retention of Attitude Change for the Issue of Athletics

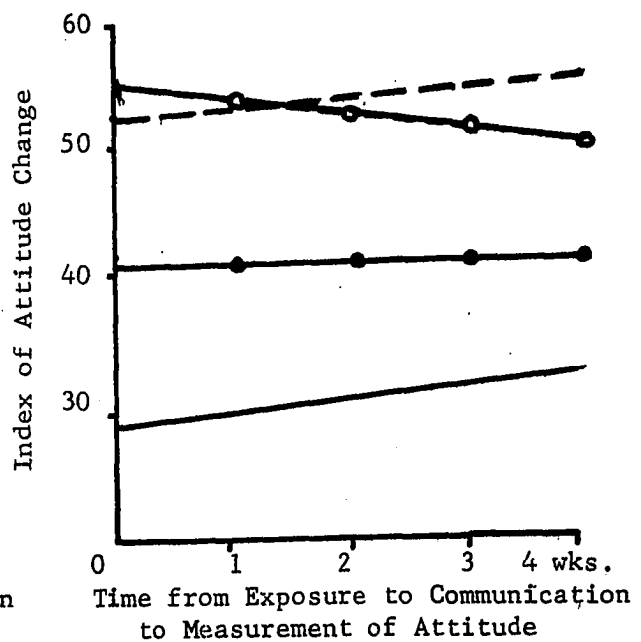
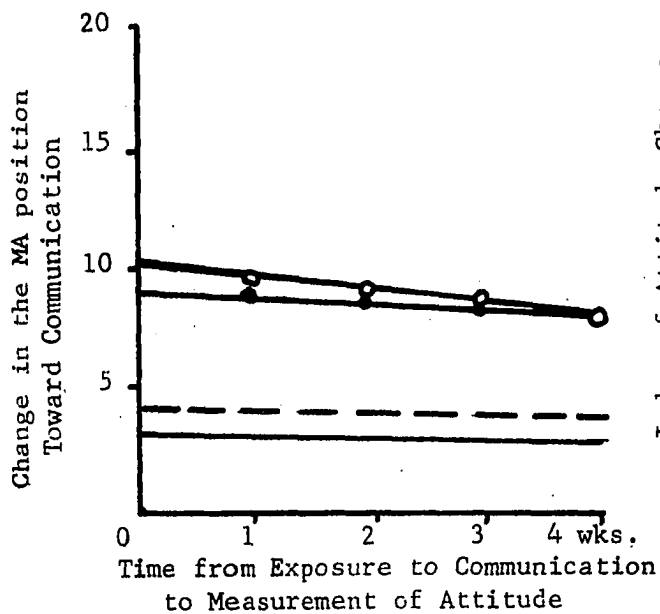
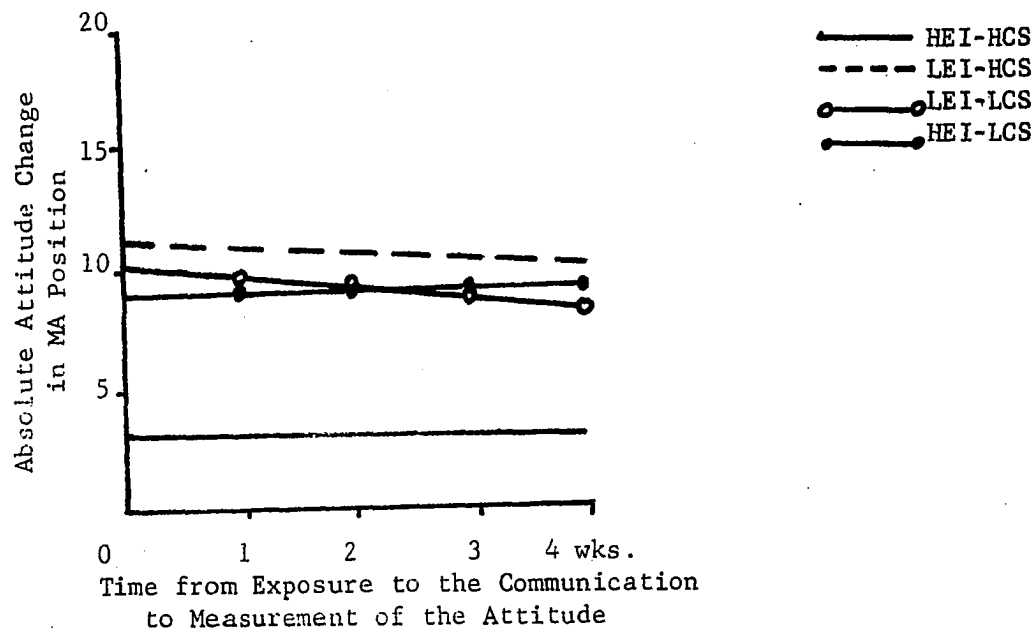


Fig. 24. Retention of Attitude Change for the Issue of Religion

results on the other two issues. The relationship between the retention of attitude change and source credibility for the issue of TV and radio call-in programs clearly indicates a sleeper effect existing for all three measures of attitude change (see Figure 25). When attitude change (MA) is used as a measure of change, the subjects in the HCS condition tend to exhibit little decay in attitude change over a four-week period. The subjects in the LCS condition increase their attitude changes so that by Posttest III they are about equal to the subjects in the HCS condition in attitude change. Using attitude change toward the communication as a measure of attitude change yields a sleeper effect with a slightly different configuration. The subjects in the HCS condition exhibited greater attitude change on Posttest I than the subjects in the LCS condition, but this change decayed over a four-week period so that by Posttest III the attitude change for the HCS condition was slightly lower than that of the LCS condition. The subjects in the LCS condition demonstrated less attitude change at the time of Posttest I than the subjects in the HCS condition; and over the four-week period between Posttests I and III, the attitude change decreased. The decay in attitude change for the LCS was not as great, however, as the HCS, so that by Posttest III the subjects in the LCS condition demonstrated slightly greater attitude change. The index of attitude change was the attitude measure that produced the clearest example of a sleeper effect. The subjects in the HCS condition initially exhibited greater

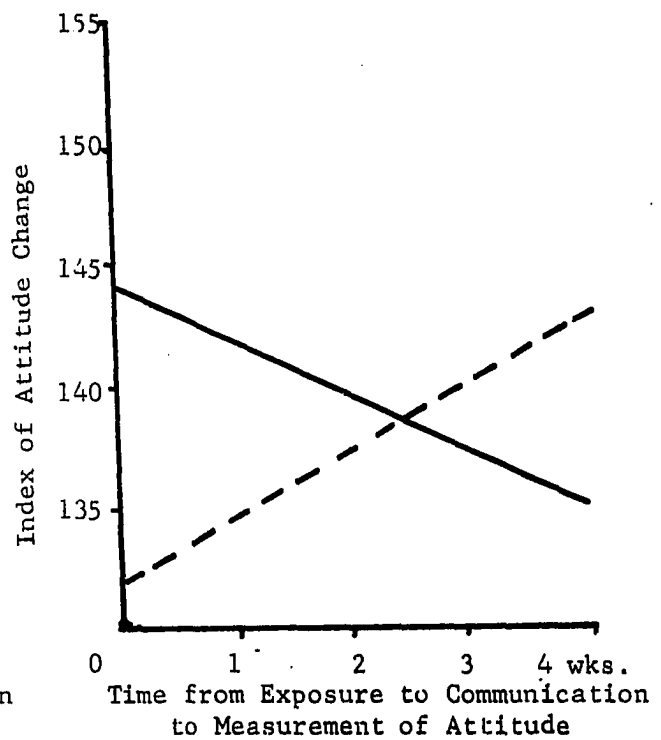
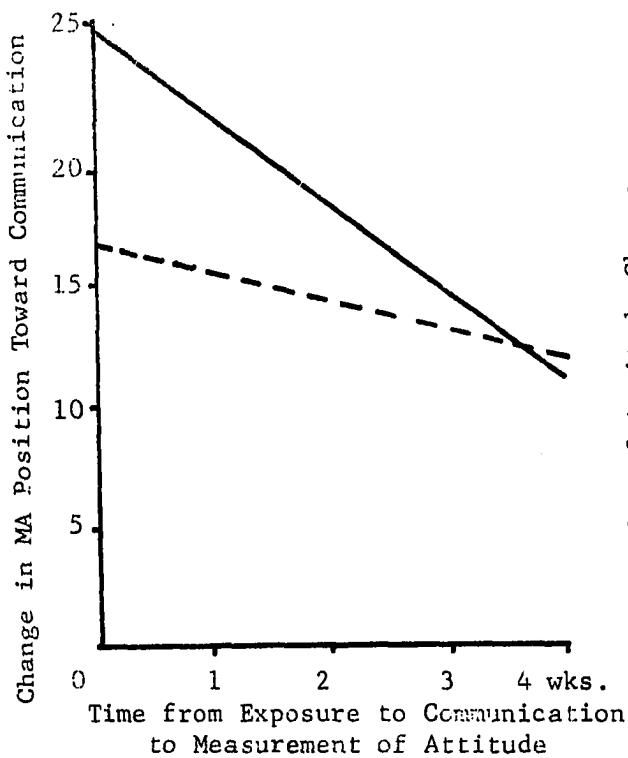
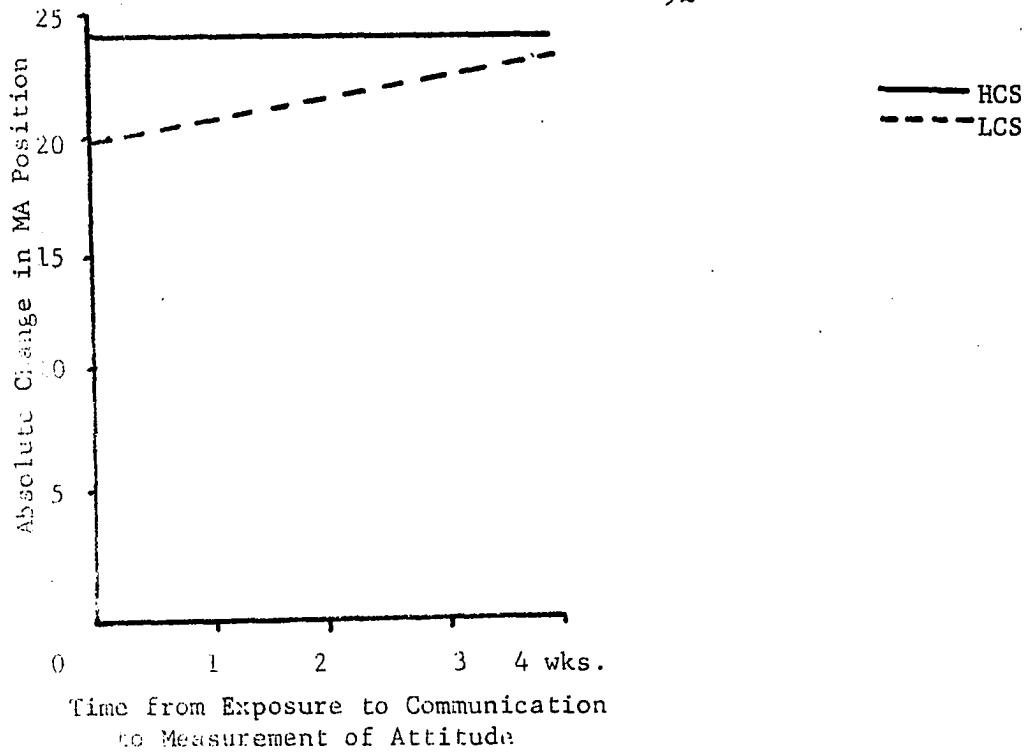


Fig. 25. Retention of Attitude Change for the Issue of TV-radio Call-in Programs

attitude change on Posttest I than the subjects in the LCS condition. The attitude change in the HCS condition decreased over four weeks so that at the time of Posttest III the attitude change in the HCS condition was less than in the LCS condition. The subjects in the LCS condition demonstrated less attitude change on Posttest I than the subjects in the HCS condition. However, over a four-week period the attitude change increased so that at the time of Posttest III the subjects in the LCS condition exhibited greater attitude change than the subjects in the HCS condition.

It is interesting to note that the passage of time appears to affect the attitude change for each of the issues differently. The attitude change on the issue of intercollegiate athletics decreased fairly evenly with the passage of time for both HCS and LCS conditions. The attitude change on religion, however, was very stable with the passage of time. It is also interesting to note that on the issue of religion, the LEI conditions exhibited greater attitude change than the HEI conditions, and the change was maintained over a period of four weeks. The issue of TV and radio call-in programs was the only issue in which the attitude change of the subjects in the HCS and LCS conditions reacted differently with the passage of time.

Time and attitude change. Closely related to the sleeper effect phenomenon is the amount of attitude change that is retained or lost with the passage of time. It was proposed that HEI subjects would experience less decay of attitude

change with the passage of time than LEI subjects. The evaluation of this proposal was based on the proportion of attitude change that was lost with the passage of time. The proportion of attitude change loss was determined for the HEI and LEI conditions in experimental condition 1 by subtracting the total attitude change for Posttest III from Posttest I and then dividing the difference by the original Posttest I total (see Table 4). The HEI and LEI conditions on the religion issue were compared on the basis of the loss of attitude change from Posttest I to Posttest III, but no significant differences were obtained for any of the three measures of attitudes (see Table 4).

A comparison of attitude loss for each of the three issues lends support to the hypothesis that the attitude change occurring in newly formed attitudes will experience greater decay. The technique for determining loss of attitude change was determined in the manner described for the HEI and LEI conditions. The proportion of attitude change toward the communication that is lost with the passage of four weeks and the results of the proportion tests are in Table 5. The proportion of attitude change loss with the passage of time was significantly greater for the issue of TV and radio call-in programs than for the issue of religion ($p < .0007$). The proportion of attitude change lost from Posttest I to III for the issue of intercollegiate athletics was significantly greater ($p < .0028$) than the loss of attitude change on the

Table 4

Proportion Tests for the Loss of Attitude Change from
Posttest I to Posttest III for
Experimental Condition I
(Religion)

	<u>Proportion of Attitude Change Lost</u>			
	LEI	HEI	z	p
LEI vs. HEI on Attitude Change (MA)	.143	0	.75	.227
LEI vs. HEI on Attitude Change in the Direction of the Communi- cation	.143	.083	.8	.212
LEI vs. HEI on Index of Attitude Change	.009	0 ^a		

^aInstead of a loss, there was an 8% increase in change; consequently, no significance test was performed.

Table 5

Proportion Tests for the Loss of Attitude Change Toward
the Communication for Each of the Issues
for Experimental Condition 1

<u>Proportion of Loss of Attitude Change</u>					
	TV-Radio	Religion	Athletics	z	p
TV-Radio Call-in Programs vs. Intercollegiate Athletics	.465		.40	.58	.28
TV-Radio Call-in Programs vs. Religion	.465	.115		3.27	.0007
Intercollegiate Athletics vs. Religion		.115	.40	2.77	.0028

issue of religion.

Ego involvement and retention. In order to compare the effects of the retention of the source and content of the article upon attitude change, the subjects were categorized upon the basis of their retention scores for the source and content of each article. Subjects were given a (1) if they were above the median on retention of the content or source and a (0) if they were below the median (see Table 6). The categorization of subjects according to whether they were above or below the median on retention of the source and content resulted in four patterns of retention (see Table 7). The first pattern of retention (C_1) indicates that the subject was above the median on retention of both the source and content of the article. The second pattern of retention (C_2) designates that the subject was above the median on retention of the content but below the median on retention of the source. The third pattern (C_3) indicates that the subject was below the median on retention of the content but above the median for retention of the source. The fourth pattern (C_4) indicates that the subject was below the median on retention for both the source and content.

In order to measure the effect of the retention of the source and content of the article upon attitude change, it was necessary to determine if retention of the source and content varied from article to article. The number of subjects retaining the source and content for each of the articles is displayed in Table 8. A chi square on retention of

Table 6

Medians for Retention of Source and
Content for the Three Articles

	<u>Above the Median</u>		<u>Below the Median</u>	
	<u>Number of Correct Responses</u>			
	Source	Content	Source	Content
Intercollegiate Athletics	2,3	3	0,1	0,1,2
Religion	2,3	2,3	0,1	0,1
TV-Radio Call-in Programs	2,3	3	0,1	0,1,2

Table 7

Patterns of Retention for the Source
and Content of an Article^a

Pattern Code	Content	Source
C ₁	1	1
C ₂	1	0
C ₃	0	1
C ₄	0	0

^a(1) designates that the retention is above the median, and (0) designates a retention score below the median. The medians for the three articles were determined by the number of correct responses.

Table 8

Retention of Source and Content
for Each of the Articles

	<u>Number of Correct Answers</u>			
	<u>Source</u>		<u>Content</u>	
	0,1	2,3	0,1	2,3
Intercollegiate Athletics	18	126	45	99
Religion	70	74	76	68
TV-Radio Call-in Programs	26	118	77	67

the content for the three issues indicated that the retention of the content was significantly different ($X^2 = 10.6$, $p < .005$). Inspection of the content retention scores indicates that the retention of the content of the religion article was lower than on the other two articles. Another chi square on retention of the source for the three issues demonstrated that the retention of the source differed significantly ($X^2 = 18.5$, $p < .005$). The source of the intercollegiate athletics article appears to be retained better than the source of the other two articles.

Analyses of variance were performed comparing the total amount of attitude change demonstrated on each of the three issues. When attitude change (MA) scores were used, the difference between the three issues approached significance ($p < .01$, see Table 9). The difference between the three issues in the amount of attitude change demonstrated was significant at the $p < .001$ level (see Tables 10 and 11), using both the attitude change toward the communication and the index of attitude change as measures. The attitude change totals on which the preceding analyses of variance were performed are in Table 12. It should be noted that the amount of attitude change was consistently greater for the issue of TV and radio call-in programs, then the issue of intercollegiate athletics was next, and the issue of religion exhibited the least amount of attitude change.

The introduction of ego involvement into the relationship between retention of the source and content of the ar-

Table 9

Analysis of Variance Performed on Attitude Change Scores Comparing Athletics, Religion, and TV-Radio Call-in Programs

Source	df	MS	F	p
Issues of Intercollegiate Athletics, Religion, TV-Radio Call-in Programs (A)	2	44.75	3.14	.10
Error	429	14.24		

Table 10

Analysis of Variance Performed on Attitude Change Toward the Communication Comparing Athletics, Religion, and TV-Radio Call-in Programs

Source	df	MS	F	p
Issues of Intercollegiate Athletics, Religion, TV-Radio Call-in Programs (A)	2	20.81	41.6	.001
Error	429	.5		

Table 11

Analysis of Variance Performed on the Index of Attitude
Change Comparing Athletics, Religion,
and TV-Radio Call-in Programs

Source	df	MS	F	p
Issues of Intercollegiate Athletics, Religion, and TV-Radio Call-in Pro- grams (A)	2	12.5	10.24	.001
Error	429	1.22		

Table 12

Amount of Attitude Change for the Issues of
Intercollegiate Athletics, Religion,
and TV-Radio Call-in Programs

	Attitude Change (MA)	Attitude Change Toward the Communication	Index of Attitude Change
Intercollegiate Athletics	186	159	814
Religion	100	69	712
TV-Radio Call- in Programs	195	168	1240

Table 13

Retention of Religion Article and Ego Involvement^a

Pattern Code	HEI	LEI
C ₁	24	17
C ₂	16	17
C ₃	13	14
C ₄	19	24

^aSee Table 7 for an explanation of the pattern code.

ticle and attitude change provides additional information regarding the relationship between retention and attitude change. It was anticipated that the HEI subjects would retain less information about the source and content of the article; hence, they would experience less attitude change. A chi square between retention categories and ego involvement on the religion issue (see Table 13) was not significant ($\chi^2 = 1.8$). It was interesting to note that the trend was in the opposite direction from what was predicted. The HEI subjects retained the source and content of the article slightly better than the LEI subjects. In order to assess the effect of ego involvement on attitude change (MA) the mean attitude change (MA) for the HEI condition (1.56) was compared to the mean attitude change of the LEI condition (3.78). The attitude change (MA) for the LEI group was significantly greater ($p < .01$) than the HEI condition (see Table 14).

Salience of issues. A direct measure of the salience of each of the three issues used in the present study was not obtained. Some indirect measures of salience were obtained, however, and they were used to infer the saliency of each of the issues. During the posttests, the subjects were asked to indicate how "intensely" they felt about each issue and how "important" each issue was to them. The mean intensity and importance scores for each of the issues are in Table 15. The analysis of variance that was performed on the intensity scores (see Table 16) indicated that the three issues were

Table 14

Analyses of Variance Performed on Attitude Change Scores (MA)
Retention vs. High and Low Ego Involvement

Source	df	MS	F	p
<u>Intercollegiate Athletics</u>				
Ego Involvement (I)	1	3.7*	2.89	.01
Retention Classification (C)	3	1.98*	1.56	NS
C X I	3	.1909*	.1496	NS
Error	136	1.276		

<u>Religion</u>				
Ego Involvement (I)	1	11.966*	10.79	.01
Retention Classification (C)	3	.5153*	.464	NS
C X I	3	1.544*	1.39	NS
Error	136	1.109		

<u>TV-Radio Call-in Programs</u>				
Ego Involvement (I)	1	0*	0	NS
Retention Classification (C)	3	.8759*	1.35	NS
C X I	3	.11374*	1.759	NS
Error	136	.6467		

*Corrected for unequal N analysis

Table 15

Means and Standard Deviations of the Intensity
and Importance of Each Issue

	Intensity of Attitude		Importance of Attitude	
	\bar{X}	S. D.	\bar{X}	S. D.
Intercollegiate Athletics	4.92	1.261	4.67	1.392
Religion	6.36	.976	6.04	1.338
TV-Radio Call- in Programs	4.15	1.449	4.21	1.589

Table 16

Analyses of Variance of the Scores for
Intercollegiate Athletics, Religion,
and TV-Radio Call-in Programs

Source	df	MS	F	p
<u>Attitude Intensity</u>				
Athletics, Religion, TV and Radio (A)	2	181.12	116.85	.001
Athletics vs. Religion	1	150.22	96.91	.001
TV-Radio vs. Religion	1	42.02	27.1	.001
Error	429	1.55		

<u>Attitude Importance</u>				
Athletics, Religion, TV and Radio (A)	2	131.08	62.71	.001
Athletics vs. Religion	1	136.12	65.12	.001
Athletics vs. TV-Radio	1	15.13	7.23	.01
Error	429	2.09		

significantly different ($p < .001$). A contrast between athletics and religion intensity scores produced a significant difference ($p < .001$), indicating a greater intensity for the issue of religion. The athletics intensity scores were contrasted with the TV and radio intensity scores, and the intensity for athletics was significantly greater ($p < .001$). Thus, it may be concluded that the subjects in the present study felt most intensely about religion, then athletics, and least of all for TV and radio call-in programs.

The means and standard deviations for the importance scores for the three issues are in Table 15, and the analysis of variance of these scores is in Table 16. The importance that the subjects attributed to the three issues varied significantly ($p < .001$). The religion issue was rated significantly more important than the athletics issue ($p < .001$). The issue of athletics was in turn rated significantly more important than the issue of TV and radio call-in programs ($p < .01$). It was concluded that for this subject population the issue of religion was most important, the issue of athletics was of next importance, and the issue of TV and radio call-in programs was of least importance.

Attitude Change

Each of the three issues was examined to determine the effects of ego involvement, source credibility, and experimental conditions upon attitude change.

Table 17 summarizes the analyses of variance for attitude

change (MA) for each of the three issues. The scores for intercollegiate athletics were placed into a 2 X 4 experimental group matrix and a 1 X 3 control group matrix. The analysis for the athletics issue compared the influence of source credibility and experimental conditions upon attitude change. The factor of ego involvement was not relevant to the athletics issue, since it had been determined only for the issue of religion and therefore was not included as a factor in the analysis of attitude change on the issue of intercollegiate athletics. The experimental and control groups for the issue of athletics were significantly different ($p < .05$), indicating that perhaps the experimental manipulation was successful. The four experimental conditions were also significantly different ($p < .05$). The religion analysis (see Table 17) was performed on the attitude change (MA) scores in a 2 X 2 X 4 experimental group matrix and a 2 X 3 control group matrix. Ego involvement was the additional dimension for both the experimental and control groups. A significant difference between the HEI condition and LEI condition was found, with the LEI condition exhibiting the greatest attitude change. The effect that the HCS and LCS had on the HEI subjects and LEI subjects was not consistent, and an interaction between source credibility and ego involvement approached significance ($p < .10$). It is ordinarily assumed that the HCS will induce the greater change in attitude, which is what occurred with the LEI subjects. The HEI subjects, however, appeared to be

influenced most by the LCS (see Figure 26). The analysis for the issue of TV and radio call-in programs consisted of casting the attitude change (MA) scores into a 2 X 4 experimental group matrix and a 1 X 3 control group matrix. Ego involvement was not included as a dimension since it had been determined on the religion issue. The experimental and control groups for the issue of TV and radio call-in programs were significantly different ($p < .01$), indicating the effectiveness of the experimental manipulation (see Table 17). There was also a significant difference between the three control groups ($p < .05$) which may be indicative of the large variance of responses to the issue of TV and radio call-in programs.

The three issues were also evaluated in terms of the amount of attitude change toward the communication (see Table 18). The results for the athletics issue are the same as in Table 17 except that the significance levels increased. The experimental group differed significantly from the control group ($p < .001$). The experimental conditions were again significantly different ($p < .01$). The results for the religion issue in Table 18 were similar but not identical with those in Table 17. The HEI subjects were consistent in demonstrating less attitude change than the LEI subjects ($p < .05$). In the present analysis the LCS condition demonstrated 44 points of attitude change, and the HCS condition yielded only 25 points, and the difference between the conditions approached significance ($p < .10$). The interaction between

source and ego involvement in Table 18 was not significant. In Table 18 the experimental and control groups for the issue of TV and radio call-in programs were not significantly different, but they were significantly different ($p < .01$) in Table 17. The control groups persisted in being significantly different ($p < .01$).

The third technique of measuring attitude change for the three issues was the index of attitude change (see Table 19). The same analyses of variance were run for this measure as had been run in Tables 17 and 18. The analysis for the inter-collegiate athletics issue indicated that the experimental and control groups were not significantly different, whereas they were significantly different in Table 17 ($p < .05$) and Table 18 ($p < .001$). The HCS condition yielded a significantly greater index of attitude change than the LCS condition ($p < .01$). The difference between the HCS condition and LCS condition did not exist for the issue of athletics in Tables 17 and 18. Consistent with Tables 17 and 18 was the significant difference between experimental conditions in Table 19 ($p < .05$). In contrast to previous results in Tables 17 and 18, the interaction between source and experimental conditions (see Figure 27) was significant ($p < .05$). The analysis of variance on the religion issue revealed a significant difference between HEI and LEI conditions ($p < .01$) for the experimental groups, with the LEI demonstrating the greatest change in the index of attitude change. This was consistent with the previous results of

Table 17

Analyses of Variance for Attitude Change Scores (MA)
Source Credibility and Experimental Conditions

Source	df	MS	F	p
<u>Intercollegiate Athletics</u>				
Experimental vs. Control (O)	1	7.76	6.31	.05
Source Credibility (S)	1	.02	.02	NS
Experimental Conditions (E_e)	3	4.76	3.87	.05
Control Conditions (E_c)	2	.05	.04	NS
S X E_e	3	.49	.40	NS
Error	187	1.233		

<u>Religion</u>				
Ego Involvement: Experimental (I_e)	1	13.44	10.93	.01
Ego Involvement: Control (I_c)	1	2.67	2.17	NS
Source Credibility (S)	1	0	0	NS
Experimental Conditions (E_e)	3	.87	.71	NS
Control Conditions (E_c)	2	1.355	1.11	NS
Experimental vs. Control (O)	1	1.21	.98	NS
I_c X E_c	2	1.05	.85	NS
I_e X E_e	3	.983	.80	NS
I_e X S	1	4.00	3.25	.10
S X E_e	3	.57	.46	NS
I_e X S X E_e	3	.61	.50	NS

Table 17 (cont.)

Source	df	MS	F	p
<u>Religion (cont.)</u>				
Error	176	1.23		
<u>TV-Radio Call-in Programs</u>				
Experimental vs. Control (O)	1	16.85	14.04	.01
Source Credibility (S)	1	.01	.008	NS
Experimental Conditions (E_e)	3	.23	.19	NS
Control Conditions (E_c)	2	4.13	3.44	.05
S X E_e	3	.227	.19	NS
Error	187	1.2		

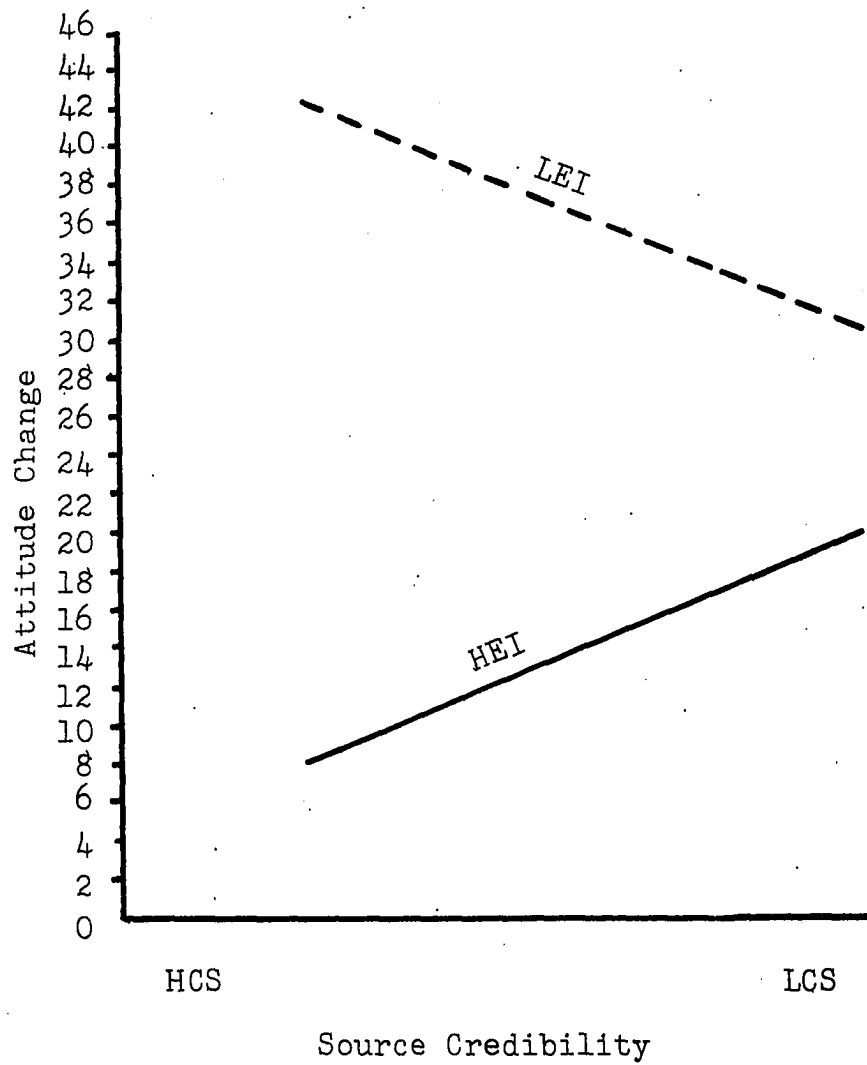


Fig. 26. Interaction of Ego Involvement and Source Credibility

Table 18

Analyses of Variance of Attitude Change
Toward the Communication
Source Credibility and Experimental Conditions

Source	df	MS	F	p
<u>Intercollegiate Athletics</u>				
Experimental vs. Control (O)	1	16.15	16.15	.001
Source Credibility (S)	1	.17	.17	NS
Experimental Conditions (E_e)	3	6.19	6.19	.01
Control Conditions (E_c)	2	.13	.13	NS
S X E_e	3	1.693	1.69	NS
Error	187	.999		

<u>Religion</u>				
Ego Involvement: Experimental (I_e)	1	4.34	5.105	.05
Ego Involvement: Control (I_c)	1	1.50	1.764	NS
Source Credibility (S)	1	2.5	2.94	.10
Experimental Conditions (E_e)	3	1.04	1.223	NS
Control Conditions (E_c)	2	.72	.847	NS
Experimental vs. Control (O)	1	1.59	1.87	NS
I_c X E_c	2	.72	.847	NS
I_e X E_e	3	.39	.458	NS
I_e X S_e	1	.07	.082	NS
S_e X E_e	3	1.04	1.223	NS

Table 18 (cont.)

Source	df	MS	F	p
<u>Religion (cont.)</u>				
$I_e \times S_e \times E_e$	3	.96	1.129	NS
Error	176	.852		

<u>TV-Radio Call-in Programs</u>				
Experimental vs. Control	1	0	0	NS
Source Credibility (S)	1	.44	.35	NS
Experimental Conditions (E_e)	3	.55	.44	NS
Control Conditions (E_c)	2	17.16	13.83	.01
$S \times E_e$	3	1.02	.82	NS
Error	187	1.24		

Table 19

Analyses of Variance of Index of Attitude Change Scores
Source Credibility and Experimental Conditions

Source	df	MS	F	p
<u>Intercollegiate Athletics</u>				
Experimental Conditions vs. Control Conditions (O)	1	7.28	1.636	NS
Source Credibility (S)	1	42.25	9.49	.01
Experimental Conditions (E_e)	3	14.67	3.297	.05
Control Conditions (E_c)	2	3.5	.79	NS
S X E_e	3	13.123	2.95	.05
Error	187	4.45		

<u>Religion</u>				
Ego Involvement: Experi- mental Conditions (I_e)	1	272.25	20.50	.01
Ego Involvement: Control Conditions (I_c)	1	146.69	11.04	.01
Source Credibility: Experi- mental Conditions (S_e)	1	20.25	1.52	NS
Experimental Conditions (E_e)	3	9.46	.71	NS
Control Conditions (E_c)	2	5.025	.38	NS
E_e vs. E_c (O)	1	5.38	.41	NS
I_c X E_c	2	3.455	.26	NS
I_e X E_e	3	5.04	.38	NS
I_e X S_e	1	16.0	1.2	NS

Table 19 (cont.)

Source	df	MS	F	p
<u>Religion (cont.)</u>				
$S_e \times E_e$	3	3.05	.23	NS
$I_e \times S_e \times E_e$	3	12.94	.97	NS
Error	176	13.28		

<u>TV-Radio Call-in Programs</u>				
Experimental Conditions vs. Control Conditions (O)	1	.33	.104	NS
Source Credibility (S)	1	.25	.079	NS
Experimental Conditions (E_e)	3	31.97	10.08	.01
Control Conditions (E_c)	2	5.57	1.75	NS
$S \times E_e$	3	4.49	1.41	NS
Error	187	3.17		

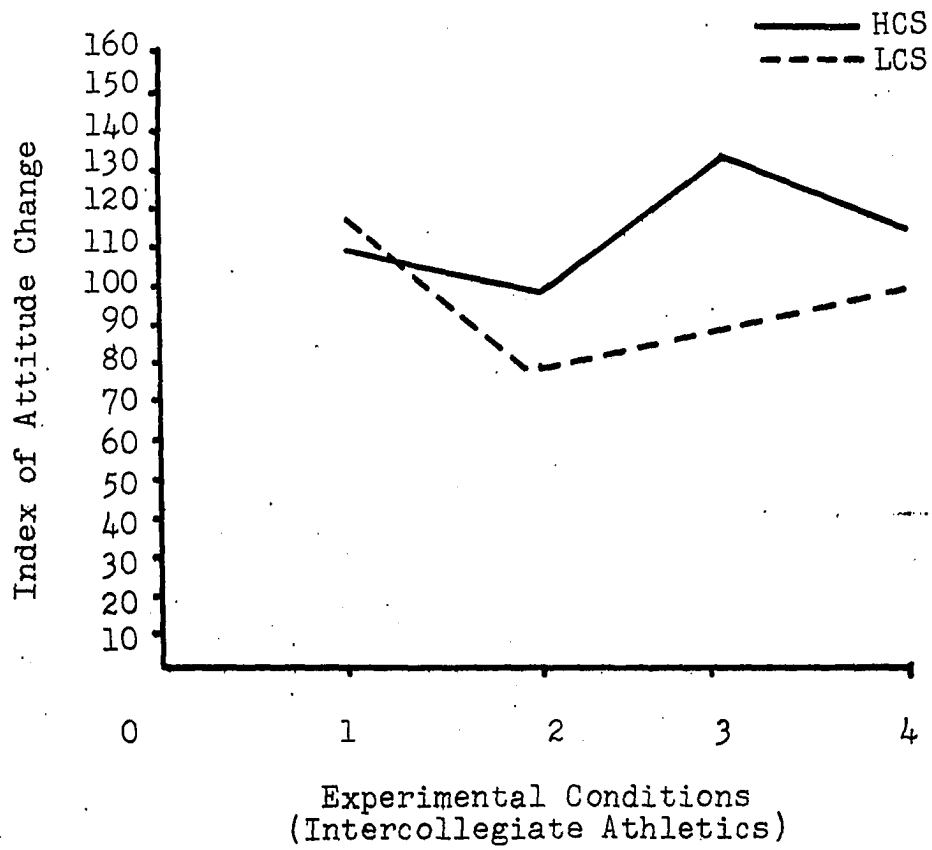


Fig. 27. Interaction of Source Credibility and Experimental Conditions

Tables 17 and 18. The analysis of index change scores differed from the results in Tables 17 and 18 in that the HEI and LEI conditions for the control group were significantly different ($p < .01$) when index of attitude change scores were used. The analysis of variance of index of attitude change scores for the TV and radio call-in programs issue differed from those in Tables 17 and 18. First, the experimental and control groups were not significantly different when index of attitude change scores were used, which disagreed with the results in Table 17. Second, this was the only analysis that yielded a significant difference between experimental conditions ($p < .01$) and a nonsignificant difference between the control groups.

Behavioral commitment. In order to assess the effect of behavioral commitment on attitude change the subjects were grouped on the basis of their behavioral commitment. The behavioral commitment to athletics was determined on the subjects' responses to the four questions on behavioral commitment (see Appendix C). The median number of hours devoted to athletics was eight. All the subjects with 0 to 7 hours ($N = 121$) were classified as low in behavioral commitment, and the subjects with eight hours or more ($N = 113$) were classified as high in behavioral commitment to athletics. On the issue of religion the same procedure was used, and the subjects with scores of 0 to 11 ($N = 119$) were considered low in behavioral commitment, and those subjects with

scores of 12 to 13 ($N = 115$) were considered high in behavioral commitment to religion. The issue of TV and radio call-in programs was divided into those subjects with a score of (0) ($N = 103$) and those with a score greater than (1) ($N = 31$). Since the median division for TV and radio call-in programs was so unequal and the spread of commitment so small, no analysis was attempted on the topic of TV and radio call-in programs on the basis of behavioral commitment.

The attitude change (MA) scores on the issue of intercollegiate athletics were placed into a $2 \times 2 \times 4$ matrix for the basic analysis (see Table 20). The comparison of highly behaviorally committed subjects and subjects low in behavioral commitment on the basis of attitude change (MA) scores approached significance ($p < .10$). The experimental conditions were significantly different ($p < .05$). The attitude change (MA) scores on the issue of religion were cast into a $2 \times 2 \times 4$ matrix for analysis (see Table 21). The comparison of the subjects on the basis of their behavioral commitment to religion yielded a significant difference only on the main effect of behavioral commitment ($p < .01$), indicating that the subjects low in behavioral commitment demonstrated greater attitude change.

Experimental conditions and attitude measurement. The experimental design of the present study was devised so as to evaluate the consequences of the time elapsing from expo-

sure to the communication and subsequent measurement of attitudes and the number of exposures to the communication. A relationship between attitude change and experimental conditions was established by ranking experimental conditions on the basis of attitude change. The experimental condition that evidenced the most attitude change received a rank of (1), the next highest condition a rank of (2), the third highest condition a rank of (3), and the experimental condition demonstrating the least amount of attitude change received a rank of (4). Each of the three issues was ranked separately on the three measures of attitude change, and this procedure produced nine sets of ranking (see Table 22). The Kendall coefficient of concordance (W), indicating the degree of relationship (0 to +1.0) between different sets of rankings, was used to ascertain the agreement in ranking. The first step was to determine if the three different measures of attitude change were consistent in the amount of attitude change produced within each experimental condition. The Kendall coefficient of concordance (W) that was used to determine the relationship may be spuriously large since the three measures of attitude change were not independent. The three different measures of attitude change for intercollegiate athletics produced the same relative amount of attitude change for each experimental condition so that the rankings for the experimental groups across the different measures was perfect ($W = 1.0, p < .01$). The rankings of the experimental condi-

Table 20

Analysis of Variance Performed on Attitude Change Scores
 Source Credibility, Experimental Conditions, and
 Behavioral Commitment
 (Intercollegiate Athletics)

Source	df	MS	F	p
Behavioral Commitment (B)	1	3.98*	3.328	.10
Source Credibility (S)	1	.1732*	.145	NS
Experimental Conditions (E)	3	4.096*	3.425	.05
I X S	1	1.039*	.869	NS
S X E	3	1.04*	.869	NS
E X I	3	.58*	.485	NS
I X S X E	3	.554*	.463	NS
Error	128	1.196		

*Corrected for unequal N analysis

Table 21

Analysis of Variance Performed on Attitude Change Scores
 Source Credibility, Experimental Conditions, and
 Behavioral Commitment
 (Religion)

Source	df	MS	F	p
Behavioral Commitment (B)	1	14.788*	12.121	.01
Source Credibility (S)	1	.00936*	.0077	NS
Experimental Conditions (E)	3	.1583*	.1297	NS
I X S	1	0	0	NS
S X E	3	.8247*	.676	NS
E X I	3	.7038*	.577	NS
I X S X E	3	1.528*	1.25	NS
Error	128	1.22*		

*Corrected for unequal N analysis

Table 22

Ranking of Experimental Conditions on
Amount of Attitude Change

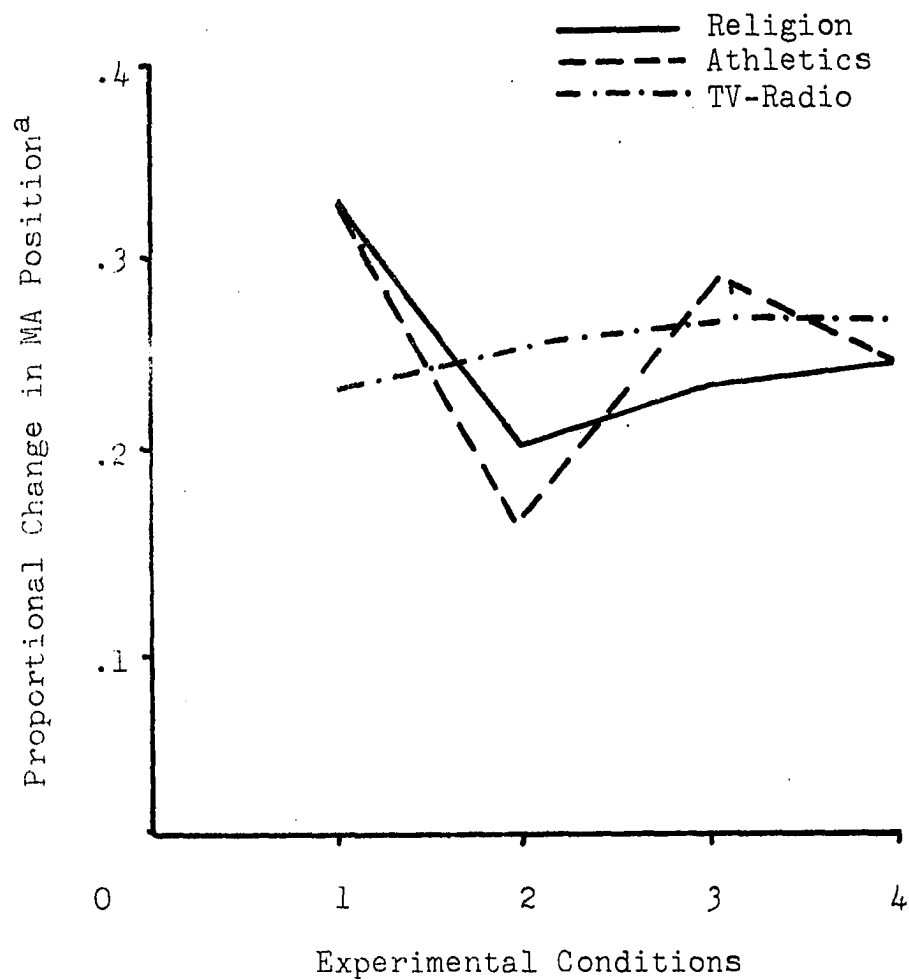
	<u>Experimental Conditions</u>			
	E_1	E_2	E_3	E_4
<u>Intercollegiate Athletics</u>				
Attitude Change (MA)	1	4	2	3
Attitude Change Toward the Communication	1	4	2	3
Index of Attitude Change	1	4	2	3

<u>Religion</u>				
Attitude Change (MA)	2	3	1	4
Attitude Change Toward the Communication	1	3.5	2	3.5
Index of Attitude Change	1	4	3	2

<u>TV-Radio Call-in Programs</u>				
Attitude Change (MA)	4	1	2	3
Attitude Change Toward the Communication	2	4	3	1
Index of Attitude Change	4	3	1.5	1.5

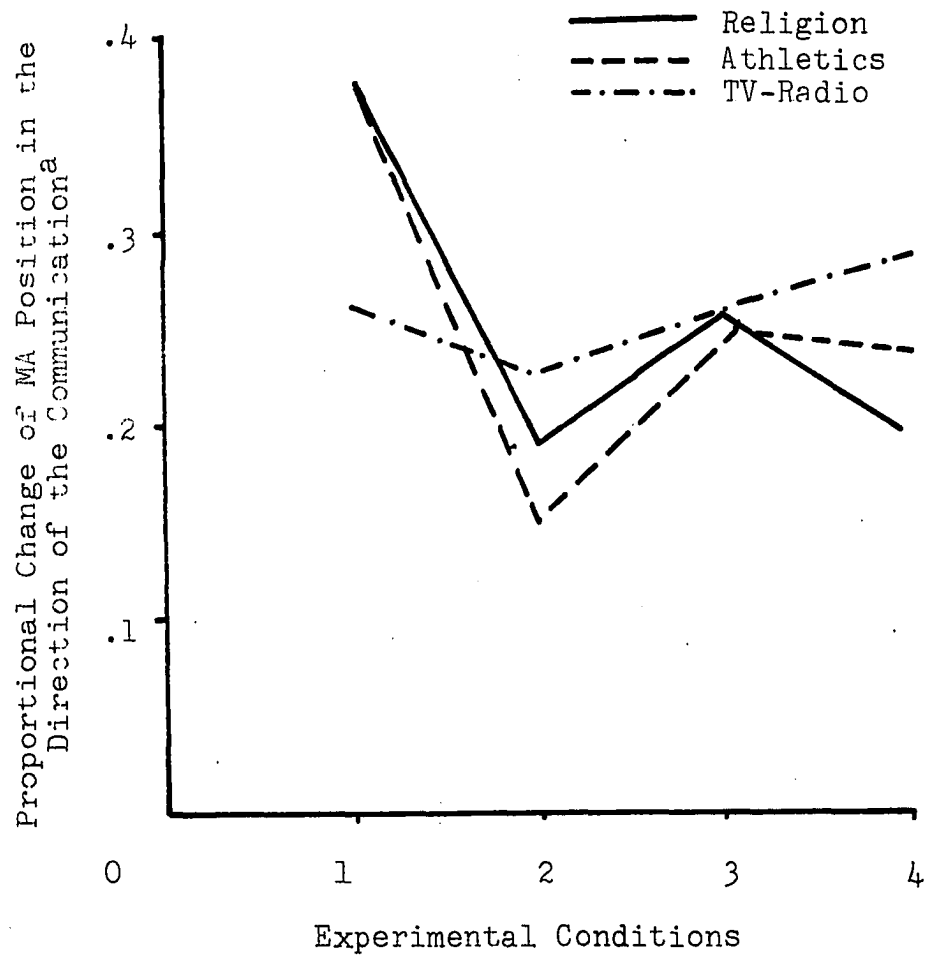
tions across measures for the religion issue was significantly consistent ($W = .61, p < .05$). The ranking of the experimental conditions across measures for TV and radio call-in programs was essentially different for each of the different measures ($W = .30, NS$). The Kendall coefficient of concordance was more legitimately used to compare the consistency of one type of attitude measurement across issues. Using the attitude change toward the communication to rank the experimental conditions for each of the three issues produced the most consistent results ($W = .833, p < .05$). Attitude change (MA) and the index of attitude change produced less consistent rankings on the experimental conditions across issues ($W = .34, W = .29$), and neither reach an acceptable level of significance. The proportion of attitude change that occurred in each of the experimental conditions was plotted for each issue and each level of measurement (see Figures 28, 29, 30). Attitude change (MA) and attitude change toward the communication (see Figures 28, 29) produced similar patterns of attitude change on the experimental conditions. Experimental conditions 1 and 3 evidenced the largest proportion of attitude change and experimental condition 4 the least. The index of attitude change (see Figure 30) does not demonstrate as much difference in proportion of change across conditions as was found in the other two measures (see Figures 28, 29).

Number of exposures. Related to the design of the experimental conditions was the number of exposures to the com-



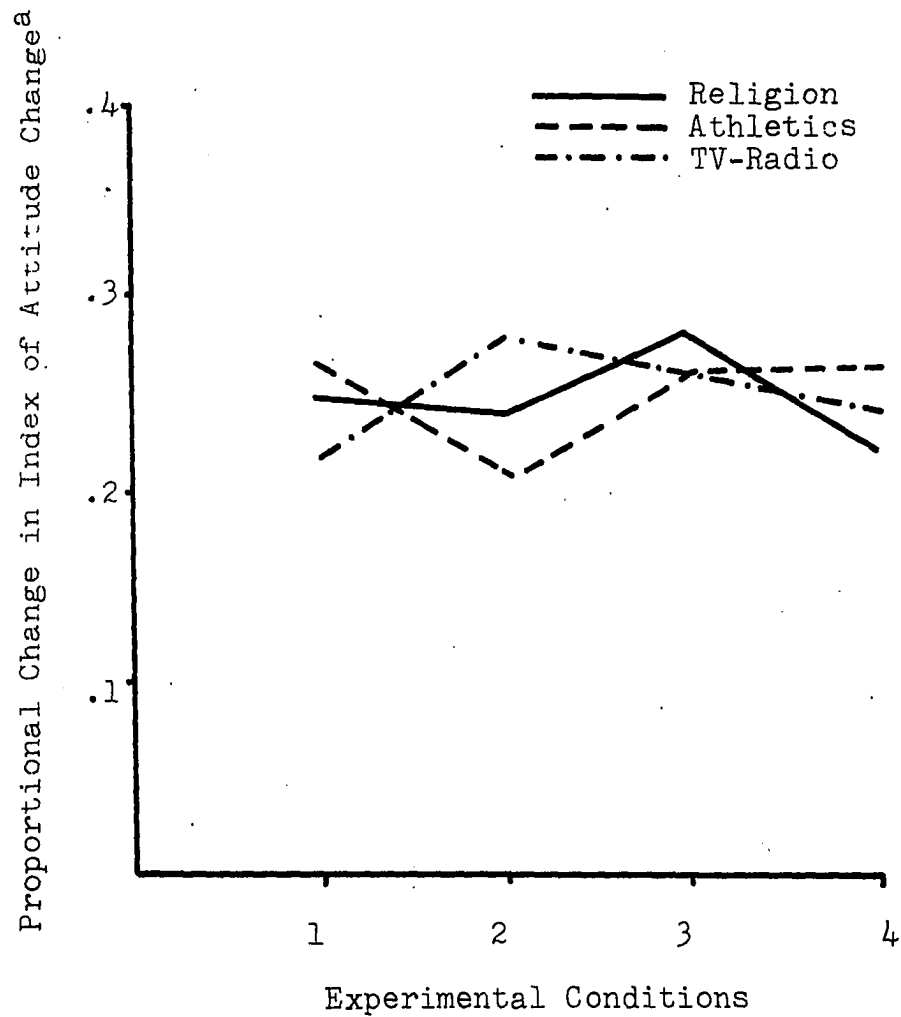
^aThe total attitude change for each issue was divided into the attitude change for each experimental condition.

Fig. 28. Comparison of MA Attitude Change and Experimental Conditions



^aThe total attitude change for each issue was divided into the attitude change for each experimental condition.

Fig. 29. Comparison of Attitude Change Toward the Communication and Experimental Conditions



^aThe total index of attitude change for each issue was divided into the index of change for each experimental condition.

Fig. 30. Comparison of Change in the Index of Attitude Change and Experimental Conditions

munication for each of the experimental conditions. It should be recalled from the methodology (see Table 1, p. 43) that experimental conditions 1 and 2 had only one exposure to the communications, but experimental conditions 3 and 4 had two exposures. It was predicted, on the basis of Sherif's (1965) social judgment-involvement approach to attitude change, that the LEI subjects would be more affected by repeated exposures to a communication. The hypothesis was tested by determining the proportion of attitude change occurring on the religion issue for experimental conditions 3 and 4 for both the LEI subjects and HEI subjects (see Table 23). A proportion test using attitude change (MA) scores revealed that the proportion of attitude change for LEI subjects was significantly greater than for HEI subjects ($p < .0009$). The LEI and HEI subjects were compared on the basis of attitude change toward the communication, and the LEI subjects exhibited a significantly greater proportion of attitude change ($p < .0016$). The LEI subjects and HEI subjects did not significantly differ on the proportion of change ($z = .809$, $p < .209$) when index of attitude change was used as a measure of change.

The proposal that repeated exposures is more effective with LEI subjects leads to the proposition that repeated exposures should be more effective with newly formed attitudes. The present study was designed so that experimental conditions 1 and 2 have only one exposure to the communication and experimental conditions 3 and 4 have two exposures to the communi-

Table 23

Proportion Tests for Religious Ego Involvement
and Experimental Conditions 3,4

	<u>Proportion of Attitude Change^a</u>			
	LEI	HEI	z	p
LEI vs. HEI on Attitude Change (MA)	.542	.286	3.122	.0009
LEI vs. HEI on Attitude Change in the Direction of the Communication	.511	.272	2.94	.0016
LEI vs. HEI on Index of Attitude Change	.527	.459	.809	.209

^aThe proportion of attitude change was obtained by dividing the total amount of attitude change for the ego involvement condition into the amount of attitude change existing for experimental conditions 3 and 4.

cations. The proportion of attitude change occurring for experimental conditions 1 and 2 and experimental conditions 3 and 4 was computed for each of the issues and each of the attitude change measures (see Table 25). Only the proportion of attitude change for experimental conditions 3 and 4 was used in the proportion analyses (see Table 24). The proportion of attitude change (experimental conditions 3,4) toward the communication for the issue of TV and radio call-in programs approached a significant difference on the religion issue ($p < .063$). Further comparisons between the issues on the basis of the proportion of attitude change existing in experimental conditions 3 and 4 were often in the expected direction but did not produce results which reached an acceptable level of significance (see Table 24).

Perception of the author and articles. The present study predicted that HEI subjects would change their attitudes less than LEI subjects. Reasoning from this basis it appeared that the HEI subjects may maintain their present attitudes by derogating either the author or article or both the author and article. The scores from the semantic differential scales on the posttest were used as measures of the authoritativeness (A) and character (C) of the author and the perception of the article (Art). The authoritativeness semantic differential scores for the author of the article on religion were placed into a $2 \times 2 \times 4$ matrix (see Table 26), and an analysis of variance was performed. The experimental conditions were significantly different ($p < .005$). A comparison

Table 24

Proportion Tests for the Amount of Attitude Change
Occurring in Experimental Conditions 3,4

	TV-Radio Call-in Programs vs. Religion		TV-Radio Call-in Programs vs. Athletics		Athletics vs. Religion	
	z	p	z	p	z	p
Attitude Change (MA)	.82	.206	.034	.488	.789	.215
Attitude Change Toward the Communication	1.53	.063	.89	.187	.635	.264
Index of Atti- tude Change	.24	.405	.45	.326	-.206	.42

Table 25

Proportion of Attitude Change for Experimental
Conditions 1,2 and 3,4

	Religion		Athletics		TV-Radio Programs	
	1,2	3,4	1,2	3,4	1,2	3,4
Attitude Change (MA)	.53	.47	.48	.52	.48	.52
Attitude Change Toward the Communication	.56	.44	.53	.47	.48	.52
Index of Atti- tude Change	.50	.50	.48	.52	.51	.49

Table 26

Analysis of Variance of Semantic Differential Scores
on the Authoritativeness of the Author
Ego Involvement, Source Credibility, and
Experimental Conditions
(Religion)

Source	df	MS	F	p
Ego Involvement (I)	1	68.06	2.0	NS
Source Credibility (S)	1	35.01	1.03	NS
Experimental Groups (E)	3	186.99	5.51	.005
EGs 1,3 vs. EGs 2,4	1	280.56	8.26	.01
I X S	1	45.56	1.34	NS
S X E	3	3.39	.09	NS
E X I	3	55.41	1.63	NS
I X S X E	3	3.37	.09	NS
Error	128	33.93		

of experimental conditions 1,3 and 2,4 revealed that the author was rated as being more authoritative for experimental conditions 1, 3 ($p < .01$). It is interesting to note that experimental conditions 1, 3 are the experimental conditions which filled out the posttest immediately following exposure to the communication.

The semantic differential scores for the character of the author of the religion article were also cast in a $2 \times 2 \times 4$ matrix for analysis of variance (see Table 27). The HEI subjects rated the authors of the religion authors lower in character than did the LEI subjects ($p < .07$). An interesting result was the LCS being rated as higher in character than the HCS ($p < .10$).

The scores from the seven-point scales used to evaluate the subjects' perception of the article were placed into a $2 \times 2 \times 4$ analysis of variance (see Table 28). The subjects in the LCS condition rated the religion article significantly higher than did the subjects in the HCS condition ($p < .05$). The experimental conditions were also significantly different ($p < .05$). A contrast between experimental conditions 1,3 and 2,4 indicated that conditions 1,3 rated the article significantly higher ($p < .05$) than conditions 2,4.

Even though there was no measure of ego involvement on the issues of intercollegiate athletics and TV and radio call-in programs, three 2×4 analyses of variance were performed comparing the effect of the source credibility and

Table 27

Analysis of Variance of Semantic Differential Scores
on the Character of the Author
Ego Involvement, Source Credibility, and
Experimental Conditions
(Religion)

Source	df	MS	F	p
Ego Involvement (I)	1	93.35	3.66	.07
Source Credibility (S)	1	81.0	3.176	.10
Experimental Conditions (E)	3	30.43	1.193	NS
I X S	1	23.95	.94	NS
S X E	3	31.87	1.249	NS
E X I	3	29.16	1.143	NS
I X S X E	3	34.57	1.356	NS
Error	128	25.5		

Table 28

Analysis of Variance of Semantic Differential Scores
Evaluating the Newspaper Articles
Ego Involvement, Source Credibility, and
Experimental Conditions
(Religion)

Source	df	MS	F	p
Ego Involvement (I)	1	73.67	1.044	NS
Source Credibility (S)	1	345.34	4.89	.05
Experimental Conditions (E)	3	254.22	3.60	.05
ECs 1,3 vs. ECs 2,4	1	315.06	4.46	.05
I X S	1	55.01	.78	NS
S X E	3	3.30	.047	NS
E X I	3	45.78	.649	NS
I X S X E	3	79.08	1.12	NS
Error	128	70.57		

experimental conditions. Using the semantic differential scores for the authoritativeness and character of the author and the evaluation of the article produced no significant results for the issue of intercollegiate athletics (see Tables 29, 30, 31). A similar set of 2 X 4 analyses of variance was performed for the issue of TV and radio programs but are not reported in the study since none of the comparisons reached an acceptable level of significance.

Effects of time. A series of 2 X 2 X 2 and 2 X 2 analyses of variance were performed on the semantic differential scores from Posttests I and III for experimental condition 1. These analyses permitted an examination of the change that occurred in the subjects' ratings of the authoritativeness and character of the author and evaluation of the newspaper article. The semantic differential scores obtained from the ratings of the author and article of the religion communication were compared on the basis of the time elapsing from the reading of the article to the posttest, ego involvement, and source credibility. The analysis performed of the ratings of the character of the author is in Table 32. The LCS source rated the character of the author significantly higher than did the HCS ($p < .01$). The difference between the LCS and HCS must, however, be interpreted in the light of the significant interaction ($p < .01$) occurring between source credibility and ego involvement (see Figure 31). The scores from the evaluation of the article on religion were placed in a 2 X 2 X 2

Table 29

Analysis of Variance of Semantic Differential Scores
on the Authoritativeness of the Author
Source Credibility and Experimental Conditions
(Intercollegiate Athletics)

Source	df	MS	F	p
Source Credibility (S)	1	23.36	.73	NS
Experimental Conditions (E)	3	65.36	2.04	NS
S X E	3	7.51	.23	NS
Error	136	32.0		

Table 30

Analysis of Variance of Semantic Differential Scores
on the Character of the Author
Source Credibility and Experimental Conditions
(Intercollegiate Athletics)

Source	df	MS	F	p
Source Credibility	1	15.34	.9	NS
Experimental Conditions (E)	3	22.56	1.33	NS
S X E	3	27.1	1.6	NS
Error	136	16.88		

Table 31

Analysis of Variance of Semantic Differential Scores
 Evaluating the Newspaper Articles
 Source Credibility and Experimental Conditions
 (Intercollegiate Athletics)

Source	df	MS	F	p
Source Credibility (C)	1	12.25	.26	NS
Experimental Conditions (E)	3	61.82	1.33	NS
E X S	3	6.38	.13	NS
Error	136	46.34		

Table 32

Analysis of Variance of Semantic Differential Scores
on the Character of the Author
Source Credibility, Ego Involvement, and Posttest I
and Posttest III for Experimental Condition I
(Religion)

Source	df	MS	F	p
Posttest I vs. Posttest III (T)	1	1.12	.075	NS
Ego Involvement (I)	1	7.35	2.07	NS
Source Credibility (S)	1	203.35	57.18	.01
T X I	1	12.49	.839	NS
T X S	1	15.13	1.016	NS
S X I	1	58.67	16.527	.01
I X S X T	1	.01	.00067	NS
Error for (I), (S), S X I	32	3.55		
Error for (T), T X I, T X S, T X S X I	32	14.89		

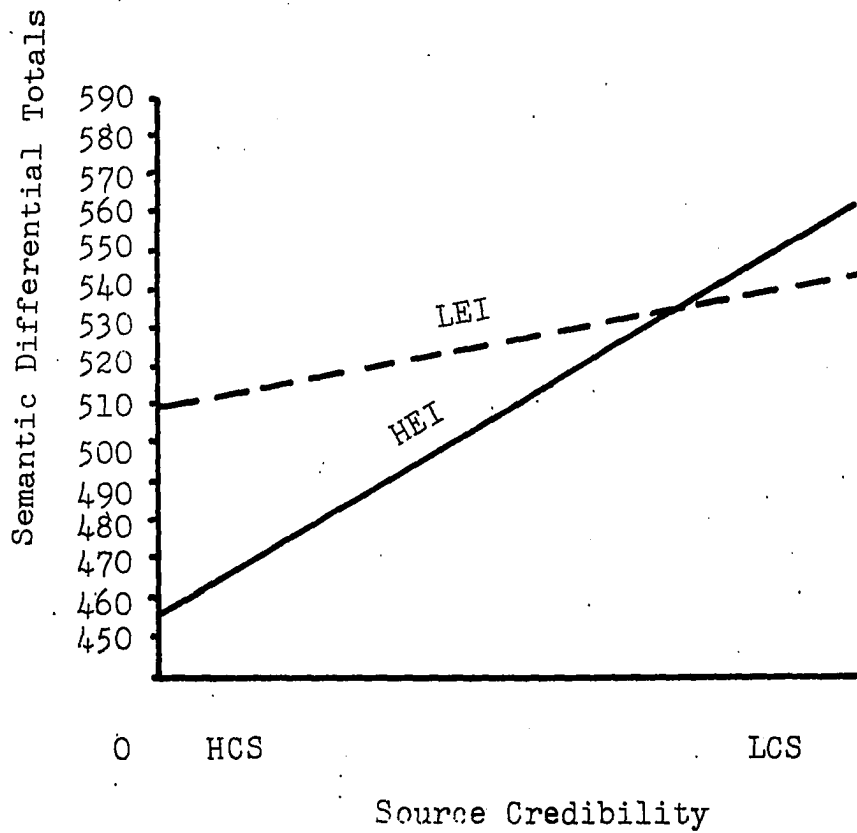


Fig. 31. Interaction of Source Credibility and Ego Involvement

analysis of variance (see Table 33). The main effect for time was significant ($p < .05$), indicating that with the passage of time from Posttests I to III the evaluation of the article decreased. From Posttests I to III the HEI subjects decreased their evaluation of the article, while the LEI subjects increased their evaluation slightly, resulting in a significant interaction ($p < .05$), which is displayed in Figure 32. The interaction between time of posttest and source credibility (see Figure 33) was also significant ($p < .05$). The graphic representation of what was occurring is displayed in Figure 34. The three-way interaction between time, ego involvement, and source credibility failed to reach an acceptable level of significance, but when the interaction was graphed (see Figure 34), it provided an insight into the dynamics of the two significant two-way interactions. The analysis of variance of the semantic differential scores evaluating the authoritativeness of the author did not yield any significant differences (see Table 34).

Author's attitude. As related in the methodology, the subjects had to fill out an attitude scale for each of the authors as they thought the author himself would have filled it out. The perceived author's attitude was used to evaluate the effects of source credibility, experimental conditions and, for the religion issue, ego involvement upon the perception of the author's position. The analyses of variance for the different issues used the author's MA position (see Table

Table 33

Analysis of Variance of Semantic Differential Scores
Evaluating the Newspaper Articles
Source Credibility, Ego Involvement, and Posttest I
and Posttest III for Experimental Condition 1
(Religion)

Source	df	MS	F	p
Posttest I vs. Posttest III (T)	1	76.05	5.62	.05
Ego Involvement (I)	1	102.72	1.525	NS
Source Credibility (S)	1	34.72	.515	NS
T X I	1	92.75	6.855	.05
T X S	1	60.5	4.47	.05
S X I	1	46.94	.697	NS
T X I X S	1	31.5	2.88	NS
Error for (I), (S), S X I	32	67.37		
Error for (T), T X I, T X S, T X I X S	32	13.53		

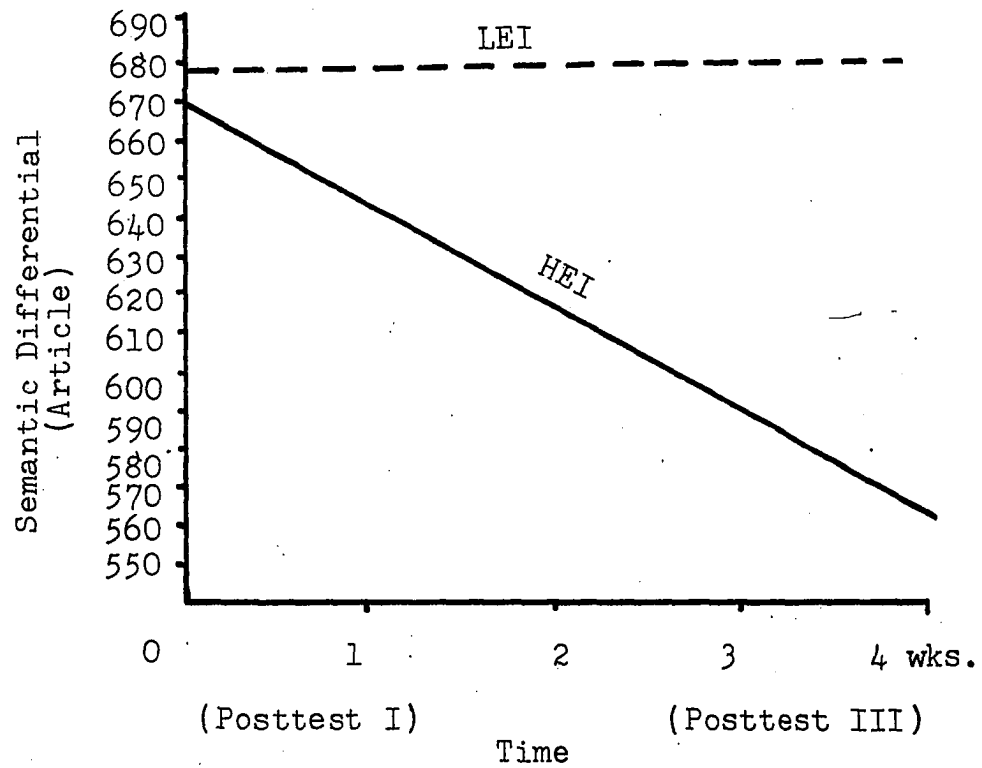


Fig. 32. Interaction of Time and Ego Involvement

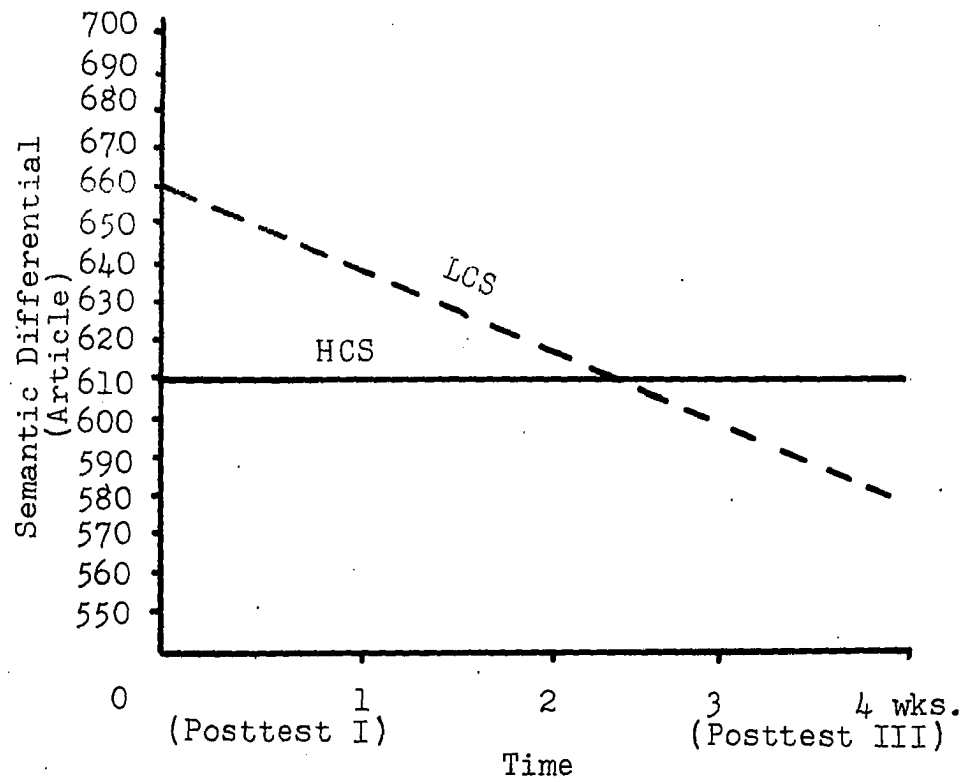


Fig. 33. Interaction of Time and Source Credibility

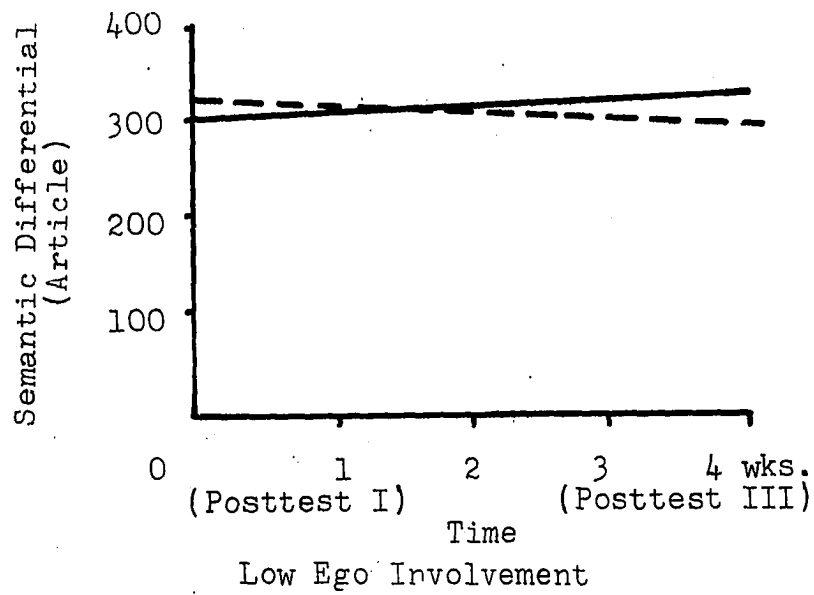
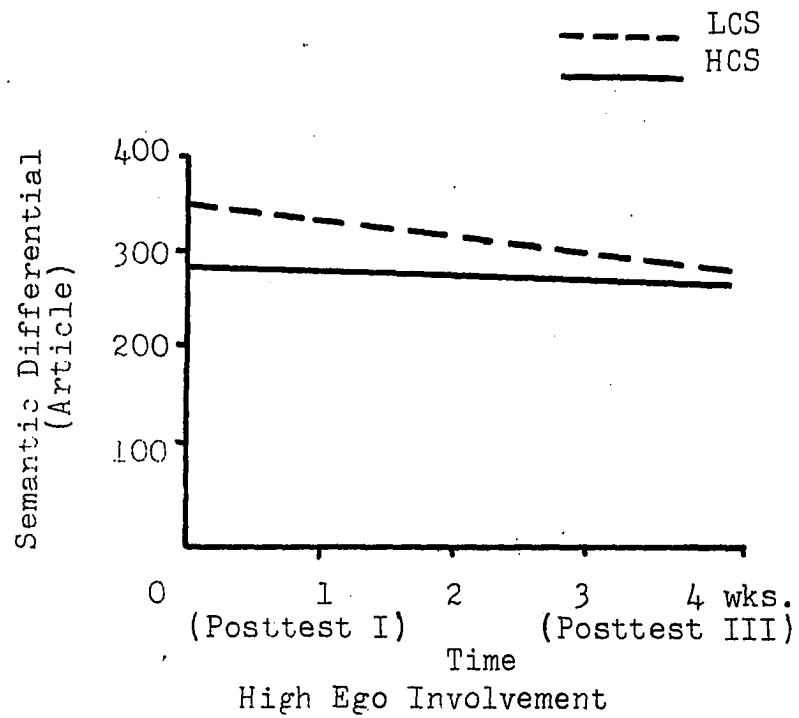


Fig. 34. Interaction of Ego Involvement, Time, and Source of Credibility

Table 34

Analysis of Variance of Semantic Differential Scores
on the Authoritativeness of the Author
Source Credibility, Ego Involvement, and Posttest I
and Posttest III for Experimental Condition 1

Source	—	df	MS	F	p
Posttest I vs. Posttest III (T)		1	8.63	.412	NS
Ego Involvement (I)		1	93.39	2.725	NS
Source Credibility (S)		1	2.0	.058	NS
T X I		1	10.25	.489	NS
T X S		1	28.75	1.37	NS
S X I		1	.88	.026	NS
T X I X S		1	25.15	1.199	NS
Error for (I), (S), S X I		32	34.24		
Error for (T), T X I, T X S, T X I X S		32	20.96		

35). The experimental conditions for the issue of intercollegiate athletics were significantly different ($p < .001$). A comparison of experimental conditions 1,3 and 2,4 indicated that subjects in experimental conditions 1,3 evaluated the author's attitude as being more extreme (in the direction of the communication) than did those in experimental conditions 2,4 ($p < .001$). The author's MA position for the issue of religion was also significantly different among the experimental conditions ($p < .01$). A contrast between experimental conditions 1,3 and 2,4 was significant ($p < .001$), and reveals that experimental conditions 1,3 viewed the author as being more toward the nine-end of the attitude scale than did experimental conditions 2,4.

The next step in determining the perception of the author's attitude was to compare the results obtained from Post-test I and III for experimental condition 1. For both the issues of athletics and TV and radio call-in programs there was a significant tendency ($p < .07$, $p < .01$, respectively) to see the author as having a less extreme MA position with the passage of time (see Table 36). The perception of the author's MA position on the issue of religion, however, did not change significantly with the passage of time (see Table 36).

Check on Experimental Manipulations

Source credibility. A partial check on the manipulation of the credibility of the authors was obtained by analyzing the responses from the short questionnaire filled out by the

Table 35

Analyses of Variance of Author's MA Position
Source Credibility and Experimental Conditions

Source	df	MS	F	p
<u>Intercollegiate Athletics</u>				
Source Credibility (S)	1	.11	.03	NS
Experimental Conditions (E)	3	38.33	10.89	.001
S X E	3	4.06	1.15	NS
Error	136	3.52		

<u>Religion</u>				
Ego Involvement (I)	1	4.00	.87	NS
Source Credibility (S)	1	3.36	.73	NS
Experimental Conditions (E)	3	18.56	4.03	.01
I X S	1	2.77	.60	NS
S X E	3	5.27	1.14	NS
E X I	3	3.87	.84	NS
I X S X E	3	2.17	.47	NS
Error	128	4.6		

<u>TV-Radio Call-in Programs</u>				
Source Credibility (S)	1	.11	.07	NS
Experimental Conditions (E)	3	1.91	1.19	NS
S X E	3	2.83	1.76	NS
Error	136	1.61		

Table 36

Analyses of Variance of Author's MA Position
Source Credibility and Time

Source	df	MS	F	p
<u>Intercollegiate Athletics</u>				
Source Credibility (S)	1	.35	.17	NS
Posttest I vs. Posttest III (T)	1	30.68	3.45	.07
S X T	1	.68	.08	NS
Error for (S)	34	2.07		
Error for (T), S X T	34	8.9		
<u>Religion</u>				
Posttest I vs. Posttest III (T)	1	.12	.05	NS
Ego Involvement (I)	1	17.01	2.68	NS
Source Credibility (S)	1	.68	.11	NS
T X S	1	2.35	1.01	NS
T X I	1	.69	.30	NS
S X I	1	7.35	1.15	NS
T X S X I	1	.12	.05	NS
Error for (I), (S), S X I	32	6.34		
Error for (T), T X S, T X S X I	32	2.32		

Table 36 (cont.)

Source	df	MS	F	p
<u>TV-Radio Call-in Programs</u>				
Source Credibility (S)	1	.23	.164	NS
Posttest I vs. Posttest III (T)	1	3.56	9.13	.01
S X T	1	.05	.13	NS
Error for (S)	34	1.4		
Error for (S), S X T				

subjects in experimental conditions 2, 3, and 4 for Posttest I (see Appendix C for the questionnaire). The expertness and honesty of the author were evaluated on two seven-point scales for each of the issues. The honesty scores were obtained by summing the two seven-point scales and the range of scores was from 2 to 44. The expertness scores were also obtained by summing the two seven-point scales and had a range of 2 to 14.

The HCS author for the issue of intercollegiate athletics was rated significantly higher ($p < .01$) than the LCS author (see Table 37). On the issue of religion the HCS author was rated slightly higher than the LCS author, but the difference was not significant. The HCS author on the issue of TV and radio call-in programs approached a significantly higher level ($p < .10$) than the LCS author (see Table 37). The results would indicate that the experimental manipulation of source credibility was successful for the issue of intercollegiate athletics and TV and radio call-in programs, but debatable for the issue of religion.

Awareness. The awareness of the subjects of the purpose of the experiment was assessed by means of an awareness questionnaire which has been previously described. The proportion of subjects aware on each awareness question varied considerably (see Figure 35), but over half the subjects (.5763) indicated that they were unaware of the purpose of the study. The six levels of awareness as deter-

Table 37

Analyses of Variance of the Scores from the Seven-Point
Scales Evaluating the Author on the Short
Questionnaire from Posttest I

Source	df	MS	F	p
<u>Intercollegiate Athletics</u>				
Source Credibility (S)	1	63.82	12.56	.01
Error	106	5.077		

<u>Religion</u>				
Ego Involvement (I)	1	14.81	2.57	NS
Source Credibility (S)	1	6.26	1.09	NS
I X S	1	.33	.06	NS
Error	104	5.75		

<u>TV-Radio Call-in Programs</u>				
Source Credibility (S)	1	12.68	3.202	.10
Error	106	3.96		

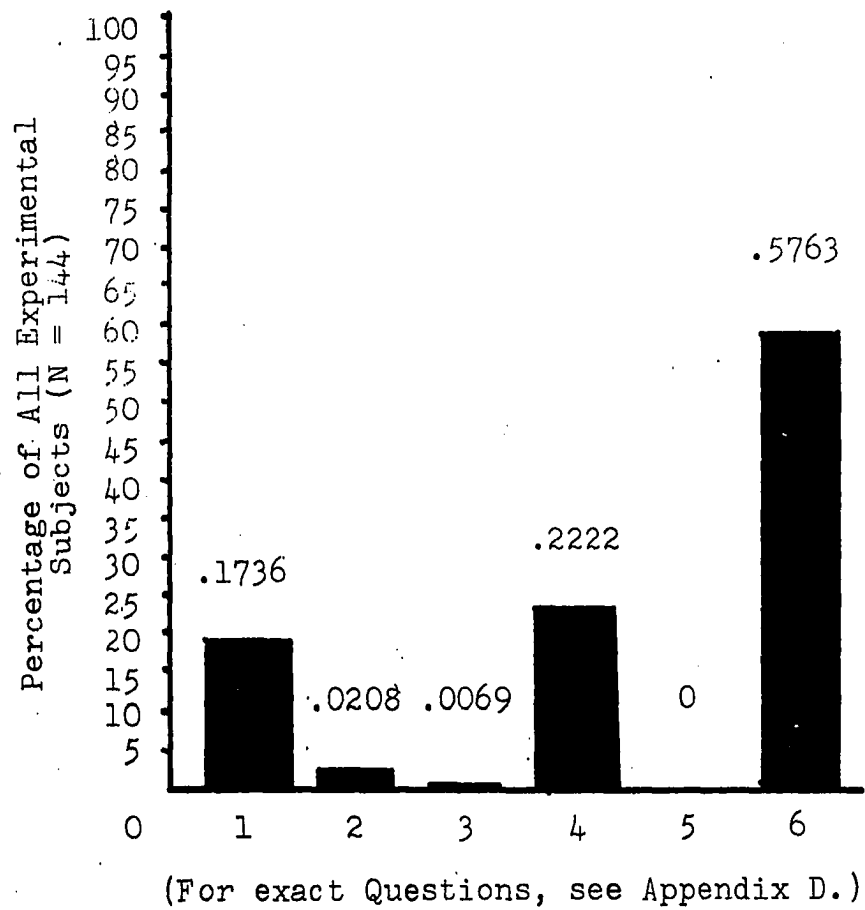


Fig. 35. Distribution of Awareness Scores

mined by the six questions were reduced to three by combining those people who were in levels 2 to 5 into one intermediate category. A 1 X 3 analysis of variance for each of the issues compared the amount of attitude change (MA) exhibited by the subjects in category (1), those in category (2-5), and those in category (6). The three levels of awareness did not differ significantly on the basis of attitude change (MA) for either intercollegiate athletics or religion (see Table 38). The levels of awareness differed significantly in the amount of attitude change (MA) on the issue of TV and radio call-in programs. Inspection of the mean amount of attitude change (MA) for each level of awareness (see Table 39) indicates little attitude change in the first level of awareness.

Table 38

Analyses of Variance Performed on Attitude Change Scores
Attitude Change and Level of Awareness

Source	df	MS	F	p
<u>Intercollegiate Athletics</u>				
Levels of Awareness (W)	2	.0713*	.0564	NS
Error	141	1.262		

<u>Religion</u>				
Levels of Awareness (W)	2	.865*	.43	NS
Error	141	1.36		

<u>TV-Radio Call-in Programs</u>				
Levels of Awareness (W)	2	3.162*	3.318	.05
Error	141	.953		

*Corrected for unequal N analysis

Table 39

Mean Attitude Change (MA) on the
Three Levels of Awareness

	<u>Levels of Awareness</u>		
	(1)	(2-5)	(6)
Intercollegiate Athletics	1.44	1.194	1.21
Religion	.60	.806	.663
TV-Radio Call- in Programs	1.0	1.528	1.37

CHAPTER IV

DISCUSSION

The major purpose of the present study was to relate ego involvement, communicator credibility, and the related factors in the four experimental conditions to attitude change. Emphasis was especially placed on the dynamics underlying the modification of attitude change with the passage of time. The results obtained supported the majority of the hypotheses proposed and, in turn, provided additional verification of the social judgment-involvement approach to attitude change proposed by Sherif et al. (1965).

Sleeper Effect

The subjects in experimental condition 1 were exposed to the communications and immediately tested (Posttest I). Then after four weeks had passed, they were retested (Posttest III) without being re-exposed to the communications. This procedure employed in the present study was essentially the same as that of Hovland and Weiss (1951) and Kelman and Hovland (1953), except that the pretest in the present study occurred twelve weeks before the first posttest, instead of just prior to Posttest I. The preceding experimental proce-

dure was employed with each of the three measures of attitude change in checking for a sleeper effect on the issues of intercollegiate athletics, religion, and TV and radio call-in programs.

There was no indication of a sleeper effect occurring between the HCS and LCS conditions for either the HEI condition or the LEI condition on the issue of religion. In fact, the attitude change demonstrated on Posttest I by the HEI and LEI subjects was maintained without significant change for four weeks until Posttest III. The small amount of attitude change exhibited on the religion issue and the consistency with which it is maintained agrees with the description of the highly ego-involved person. The significance of the initial attitude change on the religion issue could be questioned, however, since a significant difference did not exist between the experimental and control groups. The small amount of attitude change on the highly salient issue of religion also agrees with the social judgment-involvement approach to attitude change. On highly salient issues, subjects develop internal frames of reference, and when they are faced with a communication, they rely on internal anchors for their judgments. From the preceding statement it would follow that on issues low in salience the subjects would lack an internal frame of reference and would depend upon external cues. Evidence for the latter point will be presented when the issue of TV and radio call-in programs is discussed.

The effects of the HCS and LCS on the religion issue differed from both the results of the other two issues and what would ordinarily be expected. When attitude change (MA) scores were used as a measure of attitude change, the LEI subjects behaved as would be predicted, with the HCS producing more attitude change than the LCS, but in the LEI condition the LCS produced more change than the HCS. When attitude change toward the communication was used as a measure of attitude change, the LCS condition produced more attitude change than the HCS for both the HEI and LEI conditions. The index of attitude change scores revealed that the HCS and LCS conditions were about equal for the LEI subjects, but that the LCS produced more change than the HCS for the HEI subjects. All three measures of attitude change indicate that for the HEI condition the LCS is more effective than the HCS in bringing about attitude change. The present results support the assertion that the sleeper effect does not occur with HEI subjects. In fact, the initial influence of the HCS and LCS on attitude change was in the opposite direction from what would be needed for a sleeper effect similar to that obtained by Hovland and Weiss (1951) and Kelman and Hovland (1953).

Hovland (1959) suggested that on highly salient issues there would be a tendency for the HEI subjects to discredit or misinterpret the position of the communication source. On the religion issue the subjects seem to be reacting against

the HCS author and defending their attitudes against him. On the other hand, the LCS author may not be perceived as a threat to the subjects' attitudes, and they may identify with him. Consequently, the LCS author induces more attitude change.

The social judgment-involvement approach provided the basis for the inference that the sleeper effect would be most prominent in newly formed attitudes. It was anticipated that with new attitudes or attitudes low in salience the subjects would lack an internal frame of reference and depend more on external anchorages and cues for their judgments. The salience of the three issues was inferred from the subjects' ratings of the importance and intensity of each of the issues. On the basis of importance and intensity the articles were ranked from highest to lowest in salience. The religion issue was rated highest in importance and intensity, the intercollegiate athletics issue second highest, and the issue of TV and radio call-in programs last. There was no indication of a sleeper effect on the religion issue which was rated highest in salience. The intercollegiate athletics issue, which was rated second in salience, also did not exhibit a sleeper effect. However, the HCS and LCS conditions on the athletics issue did experience a significant loss of attitude change between Posttests I and III. The HCS and LCS conditions on the intercollegiate athletics issue also yielded results which were similar to those on the religion issue. The subjects reading

the article written by the LCS author demonstrated more attitude change on all three attitude measures than the subjects reading the article written by the HCS author.

TV and radio call-in programs was the only issue to demonstrate a sleeper effect. The occurrence of the sleeper effect in the issue rated lowest in salience would provide support for the hypothesis that the sleeper effect will only occur in newly formed attitudes or attitudes that are low in salience. The attitudes that are new or low in salience would appear to be more dependent upon external factors since the subjects would not have an established internal frame of reference. On Posttest I the subjects may have used the articles that they had just read to provide anchors for their judgments, but after four weeks had passed and they were given Posttest III, these anchors were no longer available. The salience of the issue and the degree to which the subjects had formed an internal frame of reference are factors which need to be examined further in the context of the sleeper effect phenomenon.

Retention and attitude change. Hovland and Weiss (1951) and Kelman and Hovland (1953) explained the sleeper effects that they obtained in their studies in terms of retention of the source and content and the effect of situation cues. The degree to which the subjects retained the content and source of the articles was determined in the present study in order to pursue the retention explanation of the attitude change

and compare it to the predisposition explanation of attitude change.

The results indicated that on highly salient issues, such as religion, subjects did not retain the content and source of the article as well as on less salient issues. A comparison of the three issues on the amount of attitude change that occurred appeared to support the proposition that the retention of the content and source was important for attitude change. The proposition became a little less definite, however, when the variable of ego involvement was introduced. It had been predicted that the HEI subjects would retain less information regarding the content and source of the article and, consequently, would experience less attitude change than the LEI subjects. The HEI condition did demonstrate less attitude change than the LEI condition; however, the two conditions did not differ in retention of the content and source. It would appear that attitude change on highly salient issues may involve more than simple retention of the content and source of an article. It might prove necessary to incorporate a motivation factor such as ego involvement into the explanation of attitude change.

Placing the subjects into the four different retention categories (see Table 7, p. 98) did not produce significant differences in attitude change between the retention categories (see Table 14, p. 105) for any of the three issues. If the retention hypothesis proposed by Hovland and Weiss

(1951) and Kelman and Hovland (1953) is correct, then those subjects who are above the median on retention of the content and source should experience greater attitude change than those below the median on retention of the content and source. None of the analyses demonstrated differential attitude change across retention categories. The results of the present study do not support the retention explanation of attitude change since the greater retention and attitude change that occurred on the issues of athletics and TV and radio call-in programs could be confounded with salience.

The retention of the content and source for each of the issues was determined by three multiple choice questions on the content and three multiple choice questions on the source. Caution should be employed in terms of interpreting the results on retention in any absolute sense, because the measure of retention has not been refined.

Attitude Change

The effects of source credibility, experimental conditions and ego involvement on attitude change were analyzed for each of the three issues. A separate analysis was performed for each of the three attitude change measures, so that there were nine separate analyses. The three measures of attitude change yielded results which generally were consistent, but if there was a disagreement between measures, it will be brought out in the following discussion.

Experimental vs. control groups. The experimental and control groups for intercollegiate athletics were significantly different on all but the index of attitude change, which lends credulity to the success of the experimental manipulation. It also indicates that an attitude which is moderately salient can be influenced by a discrepant communication. The experimental and control groups for the TV and radio call-in programs issue were only significantly different on the attitude change (MA) measure. The use of the means of the control groups as a pretest may have decreased the difference between experimental and control groups on the other two measures, especially the index of attitude change. There was no difference between the experimental group and control group for the religion issue on any of the three measures of attitude change. It would probably be difficult to induce any significantly large amount of attitude change in such a salient issue by passive means, such as reading an article. Since passive means were employed in the present study, the lack of significant differences between control and experimental groups was not unexpected.

Source credibility. The effect of the credibility of the source varied according to the measurement employed and the issue involved. On the intercollegiate athletics and TV and radio call-in programs issues the HCS condition either produced significantly greater attitude change than the LCS condition or it was in the expected direction. The effects

of the HCS and LCS were reversed, however, on the religion issue. The LCS condition produced just as much or significantly more attitude change than the HCS condition. The explanation of why the LCS condition yielded more attitude change than the HCS condition is not readily apparent. The explanation is even more difficult because the HCS was rated on the short questionnaire as being more honest and expert than the LCS. It may be that college students may recognize intellectually the authority of an expert, and he will be able to influence them on issues that they consider low in salience. But on issues which they consider important they would be more receptive to a peer group member's opinion. Thus, on highly salient issues a highly credible person may be seen as one who must be defended against, whereas college students may tend to identify with the undergraduate author. And because of his lower status, they do not have to defend their attitudes against his views.

Experimental conditions. The four experimental conditions in the present study were designed to evaluate the effect of the number of communications and the time from the exposure to the communication to the measurement of the attitude. The number of exposures to the religion communication had the predicted effect upon the HEI and LEI conditions. The LEI condition experienced greater attitude change with repeated exposures (2) than did the HEI condition. These results would lead to the conclusion that with LEI individuals

and a highly salient issue, repeated exposure to a communication is an effective means of inducing attitude change.

The number of exposures to the communication did not have the predicted effect on the less salient issues of intercollegiate athletics and TV and radio call-in programs. Repeated exposures to the communications dealing with the less salient issues was supposed to have provided additional external cues for the subjects to use as anchors in making their judgments. It appears that the basic reasoning was sound, but a serious oversight was made. The assumption that the greatest number of cues should be present in the repeated measures conditions was evidently wrong. Consistently throughout the present study experimental conditions 1 and 3 demonstrated the greatest amount of attitude change. Experimental conditions 1 and 3 were the ones that had a posttest immediately following the exposure to the communication. Considering the experimental design in retrospect, it would appear that the greatest number of cues (anchors) would probably be furnished by experimental conditions 1 and 3. When dealing with attitudes low in salience, the demand characteristics (Orne, 1962) of the experimental situation appear to be important factors in the amount of attitude change exhibited by the subjects.

The three measures of attitude change for the issue of intercollegiate athletics yielded the same relative results for all four experimental conditions. Experimental conditions

1 and 3 produced the most change and were the two that had posttests immediately following the exposure to the communication. The results may suggest that the demands associated with the experimental situation assist in bringing about attitude change. The explanation of the greater attitude change occurring because of the demand characteristics of the experiment becomes more plausible if one recalls the amount of attitude change that was lost in experimental group 1 during the four weeks from Posttest I to III. The results seem to indicate that for the issues of intercollegiate athletics and TV and radio call-in programs the number of exposures to the communication is not nearly as instrumental in bringing about attitude change as a posttest administered immediately following the communication.

Ego involvement. One of the most consistent results in the present study was the difference in attitude change between the HEI condition and LEI condition on the issue of religion. The LEI subjects exhibited greater attitude change than the HEI subjects on all three measures of attitude change. These results provided additional support for the social judgment-involvement approach to attitude change.

The concept of ego involvement appears to be especially beneficial for an understanding of attitude change on issues which are highly salient. The retention (learning-forgetting) of the content and source may provide an explanation of attitude change on issues that are low in salience, but it does not include the motivational factors which appear to influence

attitude change on highly salient issues.

Behavioral commitment. Closely allied with ego involvement is the subjects' behavioral commitment to the issue. It would seem that a person high in the motivational component referred to as ego involvement would also exhibit behavior consistent with the involvement. If behavioral commitment to religion is related to ego involvement, then subjects high in behavioral commitment should experience less attitude change than the subjects low in behavioral commitment. The findings of the present study supported the proposed relationship between ego involvement and behavioral commitment. The median behavioral commitment was determined for both the religion issue and the intercollegiate athletics issue, and the subjects for each of the issues were categorized as high or low in behavioral commitment. The analyses for both the issues revealed that the highly behaviorally committed subjects changed their attitudes less than those low in behavioral commitment. It is interesting to speculate on the interaction that may occur between ego involvement and behavioral commitment. The question could be posed as to whether high ego involvement causes high behavioral commitment or if high behavioral commitment brings about high ego involvement or if there is an interaction between the two.

Perception of the Author and Article

The present study had predicted that the HEI subjects who experienced little attitude change would tend to dero-

gate either the author and/or the article. Hovland (1959) stated that on salient issues subjects who were high in ego involvement would maintain their attitudes in the presence of a discrepant communication by discrediting the source and content of the article or by distorting the position of the author. The preceding hypothesis was supported on the basis of the results obtained from the semantic differential scales evaluating the author and article and the subjects' perception of the author's MA position.

The semantic differential scores obtained on the authoritativeness of the author yielded a significant difference between the experimental conditions. A comparison of experimental conditions 1,3 and 2,4 revealed that conditions 1,3 demonstrated the highest rating on the character of the author. The greater influence of experimental condition 1,3 is consistent with the results on attitude change. It appears that the higher character ratings in experimental conditions 1,3 may be due to the demand characteristics of the experimental setting (Orne, 1962) and warrants closer investigation. It should be emphasized that there were no significant differences between the ratings of the HEI subjects and the LEI subjects on the authoritativeness of the HCS or LCS. The agreement of the LEI and HEI subjects on the authoritativeness of the author is a reasonable finding, since it would be difficult to mistakenly perceive such objective factors such as the reality that one author is a "doctor" and another

author is an "undergraduate." It would be much easier to mistakenly perceive factors regarding the communication that are more subjective and interpretive.

The results of the present study appear to indicate that HEI subjects find it easier to distort and change the subjective evaluations of the character of the author and the quality of the article. An analysis of the semantic differential scores on the character of the author revealed that the HEI subjects rated the character of the author lower than did the LEI subjects. By rating the author of their article low in character, the HEI subjects achieved a very plausible defense of their attitudes. It would be very easy to maintain one's present attitude when the author of the article one had read was of doubtful character. A second interesting finding resulting from an analysis of the semantic differential character scores was the rating of the LCS as being higher in character than the HCS. Those subjects who read the religion article written by an undergraduate rated their author higher in character than those subjects who read the religion article written by the doctor. This is a rather surprising result, but it is consistent with the influence of the LCS and HCS on attitude change. Recall from the earlier discussion that the LCS produced more attitude change on the issue of religion than the HCS. It would appear that on a highly ego-involved issue a person of moderate credibility who is a member of the peer group possesses more charac-

ter and can bring about more attitude change than some highly credible authority.

The analysis of the scores evaluating the religion article yielded results that were consistent with those on the character of the author. The subjects reading the religion articles written by a LCS rated the article higher than those subjects reading the religion article written by a HCS. The results indicate that the character of the HCS was discredited, and then the article that he authored was also discredited. The experimental conditions differed in their evaluation of the article, and a comparison of experimental conditions 1,3 and 2,4 indicated that the highest evaluations occurred in experimental conditions 1,3. This result simply lends further support to the similar results found throughout the present study on the effects of a communication followed immediately by a posttest.

The analysis of the semantic differential scores for all the experimental groups provided some insights into the dynamics of the reaction to a highly salient issue. The results which may be even more meaningful, however, are those dealing with the change occurring over the four weeks between Posttests I and III. The subjects in EG₁ completed Posttest I and Posttest III, and since both of these posttests included semantic differential scales for the author and article, it was possible to analyze the change that occurred with the passage of the four weeks between posttests. The analysis

of the semantic differential scores on the authoritativeness of the author did not yield any significant differences. This result is consistent with the previously discussed findings on the authoritativeness of the author.

The changes occurring over time on the ratings of the character of the author and evaluation of the article were in agreement with the previous line of discussion. The subjects reading the article written by the LCS rated their LCS author higher in character than the subjects in the HCS condition rated their HCS author. The main effect for the differences between the HCS condition and LCS condition was clarified, however, by the interaction that occurred between source credibility and ego involvement (see Figure 31). The interaction indicates that the HEI subjects rated the HCS lower in character than did the LEI subjects and the LCS higher in character than did the LEI subjects. The LEI subjects tended to rate the LCS slightly higher than the HCS, but the ratings for the HCS and LCS were essentially about the same.

The analysis of the scores evaluating the religion article indicated a tendency for the evaluation of the article to decrease from Posttest I to Posttest III. This tendency to discredit the article with the passage of time has to be evaluated in the light of an interaction between the passage of time and ego involvement (see Figure 32). An inspection of the interaction indicates that the LEI subjects evaluated the article essentially the same on Posttests I and III. The HEI subjects evaluated the article about the same as the LEI

subjects on Posttest I, but on Posttest III they decreased their evaluation far below the evaluation given by the LEI subjects. The other interaction was between the passage of time and source credibility, and it indicated that on Posttest I the article written by the LCS was evaluated higher than the one written by the HCS. The evaluation of the article written by the LCS decreased with the passage of time, and on Posttest III the evaluation of the article written by the LCS was slightly lower than the evaluation of the HCS article. What appeared to be occurring was that the HEI subjects rated the LCS article higher than the HCS article on Posttest I, but on Posttest III the HCS article and LCS article received almost the same evaluation. The LEI subjects, on the other hand, evaluated the LCS article and HCS article about the same on Posttest I, but on Posttest III the evaluation of the HCS article increased so that it was slightly greater than the evaluation of the LCS article.

Author's attitude. Closely related to the results on the semantic differential scales was the analysis of the subjects' perception of the authors' attitudes. All of the subjects in the experimental conditions filled out an attitude scale for each of the articles read. The analyses of the MA scores compared the effects of source credibility, experimental conditions, and, for the religion issue, ego involvement. The experimental conditions for the intercollegiate athletics and religion issues differed in terms of the MA position of the author. A comparison between experimental

conditions 1,3 and 2,4 indicated that the former evaluated the author's MA position as being more extreme than did experimental conditions 2,4. Here again, the explanation of the results in terms of the demand characteristics of the experimental situation may be appropriate. The subjects who had just read the "discrepant" communication and were given the posttest were probably more likely to comply with the demands being made and rate the author's attitude as being extreme.

Experimental condition 1 provided an opportunity to study the change that might occur in the subjects' perception of the author's MA position during the four-week period between Posttest I and III. On Posttest III the authors of the articles on intercollegiate athletics and TV and radio call-in programs were seen as having a less extreme MA position than they had previously been assigned on Posttest I. Issues that are either moderate in salience or low in salience may not elicit a defensive reaction, and, consequently, assimilation of the author's attitude may occur.

On the issue of religion the Posttest III measure of the author's MA attitude did not differ from the Posttest I measure of the author's MA position. On highly salient issues the author's MA position does not appear to be assimilated toward one's own position, and this may assist the subject in maintaining his own attitude.

Check on Manipulations. There were several experimental checks designed into the present study, but the only two that have not been discussed are the checks made on the manipulation of the source credibility and the degree to which the subjects were aware of the purpose of the experiment. During Posttest I the subjects in experimental conditions 2, 3, and 4 simply read the communications and filled out a short questionnaire. The short questionnaire contained two seven-point scales for evaluating the author and two seven-point scales for evaluating the article. The check on the success of the manipulation of the source credibility used only the seven-point scales on the honesty and expertness of the author. On both the intercollegiate athletics article and the TV and radio call-in programs article the HCS author was rated higher in honesty and expertness than the LCS author. It would appear that on the intercollegiate athletics article and TV and radio call-in programs article, the experimental manipulation of the source credibility was successful.

The HCS author on the religion article was only rated slightly higher than the LCS author, and the difference was not significant. The failure to obtain a significant difference between the HCS author and LCS author on the religion issue was consistent with the previous results on attitude change and the evaluation of the author and article. It appears that on highly salient issues the HEI individuals and LEI individuals do not respond the same in terms of their

attitude change and consequent perception of the author and article.

Awareness. At the conclusion of the final posttest, for each experimental condition a series of six questions was asked to determine the subjects' awareness of the purpose of the experiment. The subject population for this study had been told through announcements in chapel, phone calls, letters, and in the experimental setting that the study was a journalism research project. Only a few of the subjects mentioned their suspicions that it was a psychological study. The results indicated that over half of the subjects were unaware of the purpose of the experiment.

On the basis of the six awareness questions three levels of awareness were determined. The levels of awareness had no effect on the amount of attitude change occurring on the issues of intercollegiate athletics and religion. The levels of awareness did, however, have an effect on the amount of attitude change occurring on the issue of TV and radio call-in programs. An inspection of the data revealed that the least amount of attitude change occurred with those who were in the highest level of awareness.

The awareness of the subjects on the moderate and highly salient issues of intercollegiate athletics and religion did not appear to be a seriously confounding factor in the present study. It may be that these subjects are accustomed to being confronted with discrepant communications on salient issues

and did not become suspicious. When the subjects are faced with a biased communication that they know little or nothing about, they may see this as an attempt to influence them. The question of "Why am I being asked to read this unusual article?" may lead to the answer "To see how it will affect me." On the other hand, since the TV and radio call-in programs issue was low in salience and elicited a wide range of responses, the difference between the levels of awareness could be due only to the large variance of responses.

Implications for Future Research

The present study left unanswered a number of questions and raised several questions of its own. A few of these unanswered questions will be presented on the topics of sleeper effects, attitude change, source credibility, ego involvement, and attitude measurement.

There are several aspects of the sleeper effect phenomenon which should be pursued further. First, on highly salient issues where the subjects have established internal frames of reference, what would be required to entice the subjects to use external anchors in changing their attitudes? Perhaps the source credibility manipulation could be made in a very obvious manner. The experimental manipulation of the source credibility might be accomplished by highly praising the HCS and derogating the LCS. The demand characteristics for the obvious manipulation would have to be checked and con-

trolled. A second aspect of the sleeper effect that has not been studied is the use of acceptable communications. It seems that much of the research with the sleeper effect has employed discrepant communications. It would be interesting to employ communications that are acceptable to the subjects but advocate a slightly more extreme position than what the subjects presently occupy. "Acceptable" communications could be employed on issues that vary in salience. A third aspect of the sleeper effect that needs to be explored is the time dimension. How long does it take for a sleeper effect to occur, and is the length of time required for a sleeper effect the same for all attitudes? The salience of the issue and the sleeper effect merits further study, and a study of the joint effects of issue salience and passage of time would be very interesting. The fourth aspect of the sleeper effect that requires further study is related to the measurement of attitude change. According to Sherif et al. (1965), a person may not change his MA position but may increase the size of his LA, which would allow him to be receptive to a larger number of communications. It may be that the exposure to a communication may not affect the subject's MA position immediately, but over a period of time the person may change his attitude structure. A study of the attitude structure after exposure to a communication should provide important information on the "attitude change process."

One of the criticisms that can be leveled at a study

of the sleeper effect phenomenon is that it is almost impossible to control or observe what happens between the two posttests. The effects of the reference group and other groups upon the person between the posttests could produce just about any type of effect. It would be extremely interesting to control what happens after Posttest I and not the effect on Posttest II. The subjects could be exposed to the communications and then placed in a group situation. The discussion group could be a face-to-face situation, or the subjects could be in separate rooms connected only with an intercom. The discussion group could positively reinforce on any particular schedule the statements made regarding the article, negatively reinforce the statements on any particular schedule, or render neutral comments on the statements. Following the group discussion or at a later time the final posttest could be made.

Further research into the reversed effects of the HCS and LCS on the religion issue is necessary to obtain an understanding of what is occurring to bring about the discrediting of the HCS. It would also be interesting to determine the degree of salience and ego involvement that is necessary for a subject to react to the LCS more favorably than the HCS.

The present study and that of Rand (1967) indicate that behavioral commitment is related to ego involvement. The question is, "How are they related?" If a person became be-

haviorally committed to an issue, would this increase his ego involvement on the issue? On the other hand, if a highly ego-involved person was prevented from behaving in a manner consistent with his attitudes, what would happen to his degree of ego involvement? The interaction between behavioral commitment and ego involvement has yet to be studied in any systematic fashion.

The separation of the demand characteristics and actual experimental effects is something that is necessary in any area of study. An understanding of the demand characteristics (Orne, 1962) of the experimental setting is still far from complete in studies employing repeated testing situations, such as in the present study. A study of the sleeper effect phenomenon in terms of the demand characteristics might prove to be very revealing.

Finally, an area that definitely merits further consideration is the effect of using different measures of attitude change upon the conclusions of the study. The present study indicated that a perfect relationship did not exist between the three measures of attitude change. So what would be the consequence of using only one of the measures of attitude change? It should be stated that the use of the index of attitude change in its present form is not the best measure of attitude change because it contains both change toward the communication and away from the communication. It would be very interesting to develop two additional indexes of atti-

tude change based upon the measures of the MA position, LA, MO position, LR, and LNC. One index of attitude change could measure only attitude change toward the communication, and the other index could measure only attitude change away from the communication. The two indexes could be used to study the effects of the "attitude structure" in the process of attitude change.

CHAPTER V

SUMMARY

The major purpose of the present study was to relate ego involvement, communicator credibility, and the various factors in the four experimental conditions to attitude change. Emphasis was especially placed on the dynamics underlying the modification of attitude change with the passage of time. The explanation of attitude change as a function of the retention of the content and source of the communication (Hovland & Weiss, 1951; Kelman & Hovland, 1953) and social judgment-involvement approach to attitude change proposed by Sherif et al. (1965) provided the basis for the present study.

The following predictions were made: (1) The sleeper effect will not occur with subjects who are highly ego-involved (HEI) in an issue. (2) The sleeper effect will be most prominent in newly formed attitudes. (3) The subjects who retain the source and/or content of the article will exhibit greater attitude change. (4) The HEI subjects will retain less information regarding the source and content of the article; consequently, they will experience less attitude

change. (5) HEI subjects will have a more stable attitude structure and will change their MA position less. (6) The subjects who are high in behavioral commitment to an issue will have a more stable attitude structure and will change their MA positions less. (7) The high credibility source (HCS) will induce more change in the attitude structure. (8) The greater the number of exposures to the article, the greater the change in the attitude structure. (9) The LEI subjects will be influenced more by repeated exposures. (10) Repeated exposures will be more effective with newly formed attitudes. (11) The HEI subjects will experience less decay of attitude change with the passage of time. (12) Newly formed attitudes will decay more with the passage of time than established attitudes. (13) The HEI subjects will derogate the author and the article.

The sample of subjects for the present study was selected from a pretest population of 842 students who had specified their attitudes on religion, intercollegiate athletics, Vietnam, and political party preference. The attitude scales employed in the present study conformed to the method of ordered alternatives proposed by Sherif et al. (1965). The present study dealt with communications on the issues of intercollegiate athletics, religion, and TV and radio call-in programs. The variable of ego involvement was determined from the religion scale and was not included in the analysis of the other two issues. Ninety-nine HEI subjects and 99 LEI sub-

jects were selected from the pretest population. Fifty-four subjects who had not taken the pretest were used in six post-test-only control groups. The HEI ($N = 99$) and LEI ($N = 99$) groups were divided into eight experimental groups and three control groups. Four of the experimental groups in each ego involvement condition were exposed to discrepant communications on the issues of religion, intercollegiate athletics, and TV and radio call-in programs which were authored by a HCS. The remaining four experimental groups in each ego involvement condition read the same communications, except they were authored by a LCS. Each ego involvement condition ($N = 72$) had four different experimental conditions (EC) which varied the number of exposures to the communication and the length of time between exposure to the communication and assessment of attitude change. The first experimental post-test (PT I) occurred twelve weeks after the pretest, PT II occurred two weeks later, and PT III occurred four weeks after PT I. EC 1 was exposed to the communications, and assessments were made immediately afterwards (PT I) and four weeks later (PT III). EC 2 was exposed to the communications and completed a short questionnaire (PT I), but an attitude assessment was not made until PT II. EC 3 was exposed to the communications and filled out a short questionnaire (PT I), then on PT II was re-exposed to the communications, and an attitude assessment was made. EC 4 was exposed to the communications and completed a short questionnaire on both PTs I and II, and then the assessment of the attitudes was made. The three

pre-post control groups and posttest-only control groups for the HEI and LEI conditions completed their attitude scales at the PTs I, II, and III testing sessions.

Analysis of the data confirmed hypotheses 1, 2, 3, 5, 6, 9, 12, and 13. Hypotheses 4 and 10 received partial support, and 7, 8, and 11 were not confirmed. The results were interpreted in terms of the retention of the content and source of the communication and Sherif's et al. (1965) social judgment-involvement approach to attitude change. The retention of the content and source appears to be related to attitude change on issues low in salience. The concept of ego involvement had to be employed to explain attitude change on highly salient issues. Suggestions for future research were offered on the topics of (a) the sleeper effect, (b) attitude change and post-exposure experience, (c) ego involvement and behavioral commitment, (d) ego involvement and source credibility, (e) demand characteristics of the experimental situation, and (f) attitude measurement.

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APPENDIXES

APPENDIX A

PRETEST QUESTIONNAIRE

BIOGRAPHICAL INFORMATION

Name _____

Sex: Male ☐

 Female ☐

Educational Level (circle one):

 Freshman

 Sophomore

 Junior

 Senior

Number of siblings (brothers and sisters) in your family
(excluding yourself): _____

Check the categories which apply to you:

☐ I am the only child in my family.

☐ I am the oldest child in my family.

☐ I am the youngest child in my family.

☐ I am not the oldest or youngest child in my family.

I have _____ sibling(s) older than me and _____ sibling(s)
younger than me.

INSTRUCTIONS: Please answer the following questions by circling either "yes" or "no." Answer all items.

1. Are you inclined to read of the successes of others rather than do the work of making yourself a success? Yes No
2. Would you describe yourself as an ambitious person? Yes No
3. Do you work for success rather than daydream about it? Yes No
4. Would you describe yourself as being lazy? Yes No
5. Do you usually work to do more than just get through an examination? Yes No
6. Will days often go by without your having done a thing? Yes No
7. Do you do things "today" rather than putting them off to do "tomorrow"? Yes No
8. Are you inclined to take life as it comes without much planning? Yes No
9. Do you work hard at a job? Yes No
10. Do you, or did you, do little preparation for examinations? Yes No
11. Do you grow excited when telling someone about the work you are doing? Yes No
12. Do you usually remain free from boredom when on a holiday? Yes No
13. Are you very interested in the lives of successful people? Yes No
14. Do you remain relaxed at the thought of a difficult task you are about to undertake? Yes No
15. Are you usually unimpressed by how hard others work? Yes No
16. Are you usually able to sleep even when engaged in an exciting job? Yes No

- | | | | |
|-----|--|-----|----|
| 17. | Are you usually awed in the presence of very successful people? | Yes | No |
| 18. | Can you usually concentrate on what people are saying to you even when an important job is unfinished? | Yes | No |
| 19. | Does the great achievement of others sometimes make you feel small? | Yes | No |
| 20. | Have you at any time tried to model your life on that of a successful person? | Yes | No |
| 21. | Do you readily forget your work when you are on a holiday? | Yes | No |
| 22. | Are you influenced by those around you in the amount of work you do? | Yes | No |
| 23. | Do you usually remain free from envy when others are successful? | Yes | No |
| 24. | Do you often compare how well you can do something with how well others can do it? | Yes | No |

- A. Intercollegiate athletics are an absolutely essential influence on a college campus.
- B. Intercollegiate athletics are an extremely valuable influence on a college campus.
- C. Intercollegiate athletics definitely have a more valuable influence than a detrimental influence on a college campus.
- D. Intercollegiate athletics are probably more of a valuable influence on a college campus.
- E. It is very difficult to decide whether or not intercollegiate athletics are a valuable or a detrimental influence on a college campus.
- F. Intercollegiate athletics are probably more of a detrimental influence on a college campus.
- G. Intercollegiate athletics definitely have a more detrimental influence than a valuable influence on a college campus.
- H. Intercollegiate athletics have an extremely detrimental influence on a college campus.
- I. Intercollegiate athletics are absolutely detrimental to a college campus--they should be abolished.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

(Note: Four such pages were included for each topic in each test booklet.)

- A. To live a meaningful life, I feel it is absolutely essential for me to believe in a religion.
- B. To live a meaningful life, I feel it is essential for me to believe in a religion.
- C. To live a meaningful life, it seems to me that I should believe in a religion.
- D. Although it is hard for me to decide, it is probable that I should believe in a religion to live a meaningful life.
- E. From the point of view of living a meaningful life, it is hard for me to decide whether or not I should believe in a religion.
- F. Although it is hard for me to decide, it is probable that it is not necessary for me to believe in a religion to live a meaningful life.
- G. To live a meaningful life, it seems to me that it is not necessary for me to believe in a religion.
- H. To live a meaningful life, I feel it is not essential for me to believe in a religion.
- I. To live a meaningful life, I feel it is absolutely not essential for me to believe in a religion.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

- A. It is absolutely essential from all angles in our country's interests to be involved in the war in Vietnam.
- B. Essentially the interests of our country will be served best by our involvement in the war in Vietnam.
- C. It seems that our country's interests would be better served by our involvement in the war in Vietnam.
- D. Although it is hard to decide, it is probable that our country's interests will be better served by our involvement in the war in Vietnam.
- E. From the point of view of our country's interests, it is hard to decide whether or not we should be involved in the war in Vietnam.
- F. Although it is hard to decide, it is probable that our country's interests will be better served if we were not involved in the war in Vietnam.
- G. It seems that our country's interests would be better served if we were not involved in the war in Vietnam.
- H. Essentially the interests of our country will be served best if we were not involved in the war in Vietnam.
- I. It is absolutely essential from all angles in our country's interest not to be involved in the war in Vietnam.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

- A. The election of the Republican presidential and vice-presidential candidates in the coming election is absolutely essential from all angles in the country's interests.
- B. On the whole the interests of the country will be served best by the election of the Republican candidates for president and vice-president in the coming election.
- C. It seems that the country's interests would be better served if the presidential and vice-presidential candidates of the Republican party are elected in the coming election.
- D. Although it is hard to decide, it is probable that the country's interests may be better served if the Republican presidential and vice-presidential candidates are elected in the coming election.
- E. From the point of view of the country's interests, it is hard to decide whether it is preferable to vote for presidential and vice-presidential candidates of the Republican or the Democratic party in the coming election.
- F. Although it is hard to decide, it is probable that the country's interests may be better served if the Democratic presidential and vice-presidential candidates are elected in November.
- G. It seems that the country's interests would be better served if the presidential and vice-presidential candidates of the Democratic party are elected in the coming election.
- H. On the whole the interests of the country will be served best if the presidential and vice-presidential candidates of the Democratic party are elected in the coming election.
- I. The election of the Democratic presidential and vice-presidential candidates in the coming election is absolutely essential from all angles in the country's interest.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

APPENDIX B

ARTICLES FROM THE HIGH AND LOW CREDIBILITY SOURCES AND EVALUATIVE SCALES FOR POSTTEST I

ATHLETICS ARTICLE: HIGH CREDIBILITY SOURCE

Athletics, Academics Discussed

Universities that participate in intercollegiate athletics have lower academic standards and produce fewer top quality professional people, according to a renowned authority of health and education.

In a recent news conference, Dr. William MacInree, Dean of Social Sciences at Johns Hopkins University, spoke out against the strong emphasis on intercollegiate athletics in American universities. He feels that such emphasis has resulted in a general lowering of academic standards.

Frequently citing recent research, Dr. MacInree noted several aspects of intercollegiate athletics that he felt were a detrimental influence to a college campus.

"Federal government studies demonstrated that students at participating universities have lower aptitude scores as measured by the ACT and SCAT tests given to freshmen," said Dr. MacInree. "The reason for this," he pointed out, "is that these schools do not attract good scholars." Data gathered by the Hofra School of Social Research shows that athletically strong schools seem to attract many students who are interested in college only as an opportunity for a good time. On the other hand, universities that have dropped their intercollegiate athletics programs have demonstrated higher academic excellence as compared to the era when their curriculum included such programs. He noted, for example, that the University of Chicago, since dropping intercollegiate football, has become one of the most respected academic centers

in the country.

Besides influencing the quality of students attending universities, a strong athletic program affects the faculty. Quoting a recent study in the Journal of Health and Education, Dr. MacInree said, "The existing high salaries paid to the athletic staff creates friction and dissension among the university faculty. Many professors feel that coaching salaries are so high as to make college teaching a farce: hence, emotional conflicts result in an atmosphere detrimental to the learning process."

The same research has also indicated that professors become hostile to the fact that athletic funds remain with the athletic department, providing new and better equipment for athletic personnel, while areas such as physics, chemistry, engineering, and the social sciences, often are faced with inadequate facilities and equipment, as well as lower salaries.

Dean MacInree concluded by stating what he felt was probably the most vicious aspect to intercollegiate athletic program, the effect it has on the players. Research has shown that the athlete is under constant pressure from several sources: the coaches, his parents, his friends, and the press. "The student who takes part in intercollegiate athletics and carries a full-time academic load is bound to pay a penalty somewhere along the line," he said. "Such a student usually pays a high price by cheating himself of what the value of college education is all about." For example, significantly fewer athletes distinguish themselves in forensic societies, by receiving scholarships for academic abilities, and by receiving awards for academic excellence.

The answer to the negative impact of intercollegiate athletics has to come from within the universities themselves. They determine what is the purpose of education and the relationship, if any, of athletics to such a purpose. Dr. MacInree expressed the need "for a strong de-emphasis of athletics in our universities." He stated that "the urgent social problems present in the world today demand the upgrading of academic excellence that generally follows the reduction of intercollegiate athletic activities."

ATHLETICS ARTICLE: LOW CREDIBILITY SOURCE

Athletics, Academics Discussed

Universities that participate in intercollegiate athletics have lower academic standards and produce fewer top quality professional people, according to a member of the Student Lobby for Higher Education.

In a recent article in the Oklahoma State University paper, Jim Taylor, who is a senior majoring in English, spoke out against the strong emphasis on intercollegiate athletics in American universities. He feels that such emphasis has resulted in a general lowering of academic standards.

Mr. Taylor frequently cited recent research which pointed out several aspects of intercollegiate athletics that he felt were a detrimental influence to a college campus.

"Federal Government studies demonstrated that students at participating universities have lower aptitude scores as measured by the ACT and SCAT tests given to freshmen. The reason for this," he pointed out, "is that these schools do not attract good scholars." Data gathered by the Hofra School of Social Research shows that athletically strong schools seem to attract many students who are interested in college only as an opportunity for a good time. On the other hand, universities that have dropped their intercollegiate athletic programs have demonstrated higher academic excellence as compared to the era when their curriculum included such programs. He noted, for example, that the University of Chicago, since dropping intercollegiate football, has become one of the most respected academic centers in the country.

Besides influencing the quality of students attending universities, a strong athletic program affects the faculty. Quoting a recent study in the Journal of Health and Education, Mr. Taylor said, "the existing high salaries paid to the athletic staff creates friction and dissension among the university faculty. Many professors at O.S.U.

feel that coaching salaries are so high as to make college teaching a farce: Hence, emotional conflicts result in an atmosphere detrimental to the learning process."

The same research has also indicated that professors become hostile to the fact that athletic funds remain with the athletic department, providing new and better equipment for athletic personnel, while areas such as physics, chemistry, engineering, and the social sciences, often are faced with inadequate facilities and equipment, as well as lower salaries.

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RELIGION ARTICLE: HIGH CREDIBILITY SOURCE

Religious Less Humanitarian

Devoutly religious persons tend to be anti-humanitarian, more bigoted, and express more anxiety than atheists, a recent study by a noted psychiatrist shows. After years of studying major religious denominations, Dr. Kenneth Williams, a psychiatrist of national fame with the National Institute of Psychiatric Research, released some very surprising conclusions concerning the relationship between religious sentiments and humanitarianism. The following article is part of his original report which was supported by the National Institute of Mental Health.

All organized western religious groups teach their adherents, and those they try to convert, contradictory sets of beliefs. On the one hand, they teach mutual love and respect, the golden rule, the love of justice and mercy, and to regard all men as equal in the eyes of God. On the other hand, they teach (implicitly if not openly) that only certain people can be saved--those who believe as they do; that only certain people are chosen people; that there is only one real truth--theirs.

In 1949, Clifford Kirkpatrick, professor of sociology at Indiana University, published some findings on the relationship between religious sentiments and humanitarian attitudes. His conclusions were surprising--at least to the followers of organized religion. In group after group--Catholic, Jewish, and the Protestant denominations--the devout tended to be slightly less humanitarian and had more punitive attitudes toward criminals, delinquents, prostitutes, homosexuals, and those who might seem in need of psychological counseling or psychiatric treatment.

In my own research I have found that, on the average, those who identify themselves as belonging to a religious organization express more intolerance toward racial and ethnic groups (other than their own) than do non-believers--or even Communists. It seems to me, however, that these results cannot be accounted for by assuming, as

the anti-religionists do, that religion is an unqualified force for evil; nor by assuming, as the pro-religionists do, that religion is a force only for good. These points of view may be reconciled if we assume that there exists simultaneously, within the organized religions of the West, psychologically conflicting moral forces for good and evil--teaching brotherhood with the right hand and bigotry with the left. I realize this seems an extreme interpretation; but the research literature bears it out.

Dr. Gordon supports my point by stating that "we are taught to make definite distinction between 'we' and 'they', between believer and non-believer; and sometimes we are urged to act on the basis of these distinctions." Dr. Gordon has suggested two types of religious orientation. He calls them the extrinsic and intrinsic. The extrinsic outlook on religion is utilitarian, self-centered, opportunistic, and other-directed. The intrinsic, in contrast, includes basic trust, a compassionate understanding of others so that "dogma is tempered with humility" and, with increasing maturity, "is no longer limited to single segments of self interest." The intrinsic religious individual is tolerant of others and the beliefs of others.

Dr. Gratton has also isolated two kinds of religiously-minded students, all enrolled in one denominational college. One group was open-minded and tolerant. The other group was closed-minded and highly prejudiced. These findings clearly suggest that religious people do differ strongly in their orientations toward life to the extent that their religious outlook is, as Gordon claims, extrinsic or intrinsic.

In conclusion, it seems as if there are two types of religious individuals, the one who is open and accepting and the other who is closed and rejecting. The mature religious individual should move toward the intrinsic orientation, which means he will have to develop a tolerant and open attitude toward other individuals and their beliefs.

RELIGION ARTICLE: LOW CREDIBILITY SOURCE

Religious Less Humanitarian

Devoutly religious persons tend to be antihumanitarian, more bigoted and express more anxiety than atheists, according to a recent paper by David Stevens. David Stevens is a senior majoring in philosophy at the University of Oklahoma. He recently read a paper on religion at a meeting of the Philosophy Club. The paper has generated a great deal of discussion among some of the student body and Mr. Stevens feels that his major points should be printed in order to eliminate any misunderstandings. The following article is part of his original paper.

All organized western religious groups teach their adherents, and those they try to convert, contradictory sets of beliefs. On the one hand, they teach mutual love and respect, the golden rule, the love of justice and mercy, and to regard all men as equal in the eyes of God. On the other hand, they teach (implicitly, if not openly) that only certain people can be saved--those who believe as they do; that only certain people are chosen people; that there is only one real truth--theirs.

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TELEVISION AND RADIO CALL-IN PROGRAMS:

HIGH CREDIBILITY SOURCE

Difficulties with Television and Radio Call-in Programs

Dr. James Wiley is professor of Communications at the University of Chicago and has recently completed a study which throws light on the vexing problem of radio "call-in" programs--on-the-air telephone conversations between a program host and listeners.

The three year study conducted by Dr. Wiley was supported by the Ford Foundation. The following article contains only a few of the many facts and examples that were uncovered by the study.

The format of the call-in program, when station policy requires fairness, can make for exciting programming useful to public order and an informed citizenry. Unfortunately a recent study reveals that in dozens of communities throughout the country the call-in program is not controlled for fairness.

The situation as reported in the study is especially inflammatory in the mountain states (Montana, Utah, Oregon, Washington, Colorado, Nevada, northern California, and Arizona), where heavily financed right-wing extremist groups are using radio as a strong political weapon to bring about the defeat of liberal Senators and Congressmen. There the call-in program, often supported by a right-wing sponsor and conducted on the air by a moderator of sympathetic views, encourages calls from listeners of similar persuasion. Opposition callers, according to the study, are often insulted and valified. Eventually they quit phoning in, and the program becomes a private communication network for right-wing extremists.

In Paradise, California, for instance, a retirement town with only one station (KEWQ), residents who are denied equal time on the radio "rely heavily upon the tel-

ephone to talk to one another about what they are hearing over the air 'in order,' as they say, 'to keep their sanity.'" The town's radio, instead of being a forum for contending views, has become a vehicle for organizing an ideological group in the community for overt social action.

Anonymous callers on such programs are allowed to make personal attacks. The moderator, according to the report, "singles out individuals in a town and invites listeners to telephone them." No attempt is made to challenge false statements made by callers. Common objects attacked are "schools, teachers, Negroes, labor unions, the civil rights movement, the poor, Jews, Protestant bodies, the courts, welfare recipients, and the government generally."

A police chief in Paradise, led to believe that Negroes intent on battle were about to invade the town, dispatched his cars to the town entrance. A school psychologist in Concord, California, was besieged by parents "who were prepared to believe that he was using psychological tests without their knowledge in an attempt to break down parental influence."

The situation could be tolerated if it were not so pervasive. The FCC's Fairness Doctrine has limited applicability: It offers relief for personal attacks, but does not require balance on the same program. A new FCC rule may be in order, requiring that, after several calls reflecting a single viewpoint, calls from listeners with differing opinions be accepted. The matter remains complex. Meanwhile, the only way to check a station's total unfair slant is to have local residents observe and record comprehensive samples of its overall programing for FCC evaluation when licenses come up for renewal.

Residents of Jackson monitored the station and charged inadequate representation of Negro life, as well as discrimination in programing. Other communities are extending monitoring techniques to right-wing extremist stations. The monitoring approach has already brought significant improvements in some communities. Station owners have tidied up call-in shows, rather than risk license renewal challenges.

The people watch their schools, transportation systems, health departments. No less important, they are coming to realize, are local media.

TELEVISION AND RADIO CALL-IN PROGRAMS:

LOW CREDIBILITY SOURCE

Difficulties with Television and
Radio Call-in Programs

Russell Johnson is a senior at the University of Oklahoma and is majoring in speech and radio broadcasting. The following article is from a paper that he read to the Speech Club. The paper throws light on the vexing problem of radio "call-in" programs--on-the-air telephone conversations between a program host and listeners.

The format of the call-in program, when station policy requires fairness, can make for exciting programming useful to public order and an informed citizenry. Unfortunately a recent study reveals that in dozens of communities throughout the country the call-in program is not controlled for fairness.

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The people watch their schools, transportation systems, health departments. No less important, they are coming to realize, are local media.

APPENDIX C

EVALUATIVE SCALES FOR POSTTEST II

WHAT IS YOUR OPINION?

- A. Intercollegiate athletics are an absolutely essential influence on a college campus.
- B. Intercollegiate athletics are an extremely valuable influence on a college campus.
- C. Intercollegiate athletics definitely have a more valuable influence than a detrimental influence on a college campus.
- D. Intercollegiate athletics are probably more of a valuable influence on a college campus.
- E. It is very difficult to decide whether or not intercollegiate athletics are a valuable or a detrimental influence on a college campus.
- F. Intercollegiate athletics are probably more of a detrimental influence on a college campus.
- G. Intercollegiate athletics definitely have a more detrimental influence than a valuable influence on a college campus.
- H. Intercollegiate athletics have an extremely detrimental influence on a college campus.
- I. Intercollegiate athletics are absolutely detrimental to a college campus--they should be abolished.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

AUTHOR'S OPINION

- A. Intercollegiate athletics are an absolutely essential influence on a college campus.
- B. Intercollegiate athletics are an extremely valuable influence on a college campus.
- C. Intercollegiate athletics definitely have a more valuable influence than a detrimental influence on a college campus.
- D. Intercollegiate athletics are probably more of a valuable influence on a college campus.
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- G. Intercollegiate athletics definitely have a more detrimental influence than a valuable influence on a college campus.
- H. Intercollegiate athletics have an extremely detrimental influence on a college campus.
- I. Intercollegiate athletics are absolutely detrimental to a college campus--they should be abolished.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

The purpose of this section of the study is to measure the meanings of certain things to various people by having them judge them against a series of scales. While taking this test, please make your judgments on the basis of what these things mean to you. On the page following these instructions you will find a different concept to be judged and beneath it a set of scales. You are to rate the concept on each of these scales.

Here is how you are to use these scales. If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check-mark as follows:

fair X : : : : : : unfair

or

fair : : : : : X unfair

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

strong : X : : - : : : weak

strong : : or : : X : weak

If the concept seems only slightly related to one side as opposed to the other side (but not really neutral), then you should check as follows:

active _____ : _____ : X : _____ : _____ : _____ : _____ passive

active : : : or : X : : : passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seems most characteristic of the thing you are judging. If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space.

safe : : X : : dangerous

IMPORTANT: (1) Place your check-marks in the middle of the
spaces, not on the boundaries:

 : X : : : X :

this not this

(2) Be sure to check every scale for every concept--do not omit any.

- (3) Never put more than one check-mark on a single scale.

Please do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the booklet. Make each item a separate and independent judgment. Work at a fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that we want. On the other hand, please do be careful, because we want your true impressions.

You may turn the page now and judge the author. When you finish, judge the message.

(Note: A set of semantic differential instructions and scales followed the subjects' and authors' opinion for each issue.)

WHAT IS YOUR OPINION?

- A. To live a meaningful life, I feel it is absolutely essential for me to believe in a religion.
- B. To live a meaningful life, I feel it is essential for me to believe in a religion.
- C. To live a meaningful life, it seems to me that I should believe in a religion.
- D. Although it is hard for me to decide, it is probable that I should believe in a religion to live a meaningful life.
- E. From the point of view of living a meaningful life, it is hard for me to decide whether or not I should believe in a religion.
- F. Although it is hard for me to decide, it is probable that it is not necessary for me to believe in a religion to live a meaningful life.
- G. To live a meaningful life, it seems to me that it is not necessary for me to believe in a religion.
- H. To live a meaningful life, I feel it is not essential for me to believe in a religion.
- I. To live a meaningful life, I feel it is absolutely not essential for me to believe in a religion.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

AUTHOR'S OPINION

- A. To live a meaningful life, I feel it is absolutely essential for me to believe in a religion.
- B. To live a meaningful life, I feel it is essential for me to believe in a religion.
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- I. To live a meaningful life, I feel it is absolutely not essential for me to believe in a religion.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

WHAT IS YOUR OPINION?

- A. It is absolutely essential from all angles in our country's interest to pass laws regulating T.V. and radio call-in programs.
- B. Essentially the interests of our country will be served best by the passage of laws regulating T.V. and radio call-in programs.
- C. It seems that our country's interest would be better served by the passage of laws regulating T.V. and radio call-in programs.
- D. Although it is hard to decide, it is probable that our country's interest will be better served by the passage of laws regulating T.V. and radio call-in programs.
- E. From the point of view of our country's interests, it is hard to decide whether or not laws should be passed to regulate T.V. and radio call-in programs.
- F. Although it is hard to decide, it is probable that our country's interests will be better served if laws were not passed regulating T.V. and radio call-in programs.
- G. It seems that our country's interests would be better served if laws were not passed regulating T.V. and radio call-in programs.
- H. Essentially the interests of our country will be served best if laws were not passed regulating T.V. and radio call-in programs.
- I. It is absolutely essential from all angles in our country's interest not to pass laws regulating T.V. and radio call-in programs.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

AUTHOR'S OPINION

- A. It is absolutely essential from all angles in our country's interest to pass laws regulating T.V. and radio call-in programs.
- B. Essentially the interests of our country will be served best by the passage of laws regulating T.V. and radio call-in programs.
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- I. It is absolutely essential from all angles in our country's interest not to pass laws regulating T.V. and radio call-in programs.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

ATTITUDE INTENSITY

Considering those things that you feel strongly about from day to day, how strongly do you feel about the following issues? You may be for or against an issue, what we want is how strongly you feel about your position. Please check the position that describes your feelings.

1. Religion:

Very Strongly____:____:____:____:____:____:____ Very Weakly

2. Intercollegiate Athletics

Very Strongly____:____:____:____:____:____:____ Very Weakly

3. Better laws for T.V. and Radio Call-in Programs

Very Strongly____:____:____:____:____:____:____ Very Weakly

ATTITUDE IMPORTANCE

Considering all the things you think about from day to day, activities you engage in from day to day, etc., answer each of the statements on this page with regard to the following question. "How important is this issue to you?" Put an "X" in the category which represents your opinion.

1. Cheating should be treated as a serious offense on college campuses.

Not at all _____ Extremely
important ____:____:____:____:____:____:____ important

2. Homosexuals should be ostracized from society.

Not at all _____ Extremely
important ____:____:____:____:____:____:____ important

3. The United Nations should be dissolved.

Not at all _____ Extremely
important ____:____:____:____:____:____:____ important

4. Intercollegiate athletics are an extremely valuable influence on a college campus.

Not at all _____ Extremely
important ____:____:____:____:____:____:____ important

5. To live a meaningful life, religion is absolutely essential.

Not at all _____ Extremely
important ____:____:____:____:____:____:____ important

6. It is absolutely essential from all angles in our country's interest not to be involved in the war in Vietnam.

Not at all _____ Extremely
important ____:____:____:____:____:____:____ important

7. Radio and TV programs should be controlled by more and stronger regulations.

Not at all _____ Extremely
important ____:____:____:____:____:____:____ important

ATHLETICS

1. Are you actively involved in any formal sport activities? This would include such activities as intercollegiate football, wrestling, baseball, track, etc. Indicate the kind and average number of hours per week.

ActivitiesHours per Week

_____	_____
_____	_____
_____	_____

2. Are you actively involved in any informal sport activities? This would include such things as touch football, swimming, sandlot baseball, etc. Indicate the kind and approximately the hours per week.

ActivitiesHours per Week

_____	_____
_____	_____
_____	_____

3. Indicate what kind of sport activities you attend as a fan as well as the average number of hours per week.

What Event?Hours per Week

_____	_____
_____	_____
_____	_____

4. How many hours a week do you watch, or listen to sport activities on T.V. or radio?

ActivitiesHours per Week

_____	_____
_____	_____
_____	_____

TELEVISION AND RADIO CALL-IN PROGRAMS

1. How committed are you to your stand on T.V. and radio call-in programs? This would involve how often you express your views to other people and how clear you have made your stand to them. Indicate how clearly you have expressed your beliefs regarding this issue to other people.

_____ Very unclear
 _____ Unclear
 _____ Not sure
 _____ Clear
 _____ Very clear

2. How much time do you spend on an average day thinking or talking about T.V. and radio call-in programs?

_____ less than 15 minutes
 _____ 15 to 30 minutes
 _____ 30 to 45 minutes
 _____ 45 minutes to one hour
 _____ more than one hour

3. Are you involved in any community or campus groups which have a stand on T.V. and radio call-in programs? Please indicate the groups and the number of hours that you devote to each of them every week.

Groups

Hours per week

_____	_____
_____	_____
_____	_____

4. How many hours a week do you spend listening to T.V. and radio call-in programs?

Types of Media

Hours per week

_____	_____
_____	_____
_____	_____

RELIGION

1. What is your religion? _____

2. How do you classify that religion? (check one)

_____ Protestant

_____ Catholic

_____ Baptist

_____ Jewish

_____ Other

_____ None

3. How often do you attend church services? (check one)

_____ Never

_____ Rarely: for some special events, such as weddings.

_____ Occasionally: weddings, some religious holidays.

_____ About every two months.

_____ About once a month.

_____ About twice a month.

_____ About once a week.

_____ More than once a week.

4. To what extent do you participate in church activities other than church services? (check one)

_____ Not at all

What kind of activities:

_____ Rarely

_____ Occasionally

_____ Quite often

_____ Very regularly

APPENDIX D

EVALUATIVE SCALES FOR POSTTEST III

RETENTION QUESTIONNAIRE

- _____ 1. The author of the article that you read on intercollegiate athletics was:
A. Mr. John Simpson
B. Dr. William MacInree
C. Mr. Jim Taylor
D. Dr. George Enzie
- _____ 2. The author of the article on intercollegiate athletics was a/an:
A. high school graduate
B. undergraduate
C. graduate doctor
D. doctor
- _____ 3. The author of the athletics article was _____ intercollegiate athletics.
A. opposed to
B. slightly in favor of
C. in favor of
D. strongly in favor of
- _____ 4. According to the author of the article on intercollegiate athletics, the effect of intercollegiate athletics is to:
A. improve morale
B. cost the educational institution additional expense
C. increase campus rowdiness
D. lower academic standards
- _____ 5. The author concluded his article by stating that the most detrimental effect of intercollegiate athletics was its effect upon:
A. the faculty
B. the student body
C. the athletes themselves
D. those who do not participate in athletics

- _____ 6. According to the author, the answer to intercolle-
giate athletics must come from the:
A. university
B. legislature
C. federal government
D. parents
- _____ 7. The author of the article that you read on religion
was:
A. Dr. Joseph Klein
B. David Stevens
C. Dr. Kenneth Williams
D. John Scott
- _____ 8. The author of the article on religion was a/an:
A. doctor
B. graduate student
C. elderly citizen
D. undergraduate
- _____ 9. The author of the article on religion was _____
contemporary religions.
A. completely in favor of all
B. in favor of certain intrinsic approaches to
C. in favor of certain extrinsic approaches to
D. completely against all
- _____ 10. According to the author of the article on religion,
the effect of religion is to make a person:
A. more or less humanitarian depending upon whether the
person has an intrinsic or extrinsic orientation
B. more humanitarian
C. less humanitarian
D. more or less humanitarian depending upon the depth
of the person's beliefs
- _____ 11. The author of the article on religion stated that
religious individuals are generally _____
tolerant of racial or ethnic groups.
A. moderately
B. less
C. more
D. highly
- _____ 12. The author concluded by stating that the mature re-
ligious person should move toward a/an _____
orientation to religion.
A. depth
B. academic
C. extrinsic
D. intrinsic

- ____ 13. The author of the article that you read on television and radio call-in programs was:
- A. Dr. James Wiley
 - B. Bill Thompson
 - C. Russell Johnson
 - D. Dr. James Dunn
- ____ 14. The author of the article on television and radio call-in programs was a/an:
- A. news commentator
 - B. undergraduate
 - C. Doctor
 - D. Senator
- ____ 15. The author of the television and radio article was _____ television and radio call-in programs for political reasons.
- A. strongly in favor of
 - B. in favor of
 - C. slightly in favor of
 - D. opposed to
- ____ 16. According to the author of the article on television and radio call-in programs, the _____ have taken over some radio stations in the mountain states.
- A. die hard moderates
 - B. left-wing extremists
 - C. right-wing extremists
 - D. socialists
- ____ 17. The author of the television and radio call-in programs article stated that the problem with the programs was that:
- A. they were too strictly controlled
 - B. they were not controlled enough for fairness
 - C. they took up too much air time
 - D. they were too controversial
- ____ 18. According to the author, the solution for television and radio call-in programs is to:
- A. reduce the amount of time they have on the air
 - B. reduce the number of restrictions
 - C. enact better laws and meanwhile have the citizens monitor their stations
 - D. discuss less controversial issues

SELF ESTEEM QUESTIONNAIRE

1. How often do you feel inferior to most of the people you know?

Very often ____:____:____:____:____:____:____ Practically never

2. Do you ever think that you are a worthless individual?

Very often ____:____:____:____:____:____:____ Practically never

3. How confident do you feel that some day the people you know will look up to you and respect you?

Very often ____:____:____:____:____:____:____ Practically never

4. How often do you feel to blame for mistakes?

Very often ____:____:____:____:____:____:____ Practically never

5. Do you ever feel so discouraged with yourself that you wonder whether anything is worth while?

Very often ____:____:____:____:____:____:____ Practically never

6. How often do you feel that you dislike yourself?

Very often ____:____:____:____:____:____:____ Practically never

7. In general, how confident do you feel about your abilities?

Very ____:____:____:____:____:____:____ Not at all

8. How often do you have the feeling that there is nothing you can do well?

Very often ____:____:____:____:____:____:____ Practically never

9. How much do you worry about how well you get along with other people?

Very ____:____:____:____:____:____:____ Not at all

10. How often do you worry about criticisms that might be made of your work by whoever is responsible for checking up on your work?

Very often ____:____:____:____:____:____:____ Practically never

11. Do you ever feel afraid or anxious when you are going into a room by yourself where other people have already gathered and are talking?

Very often ____:____:____:____:____:____:____ Practically never

12. How often do you feel self-conscious?

Very often ____:____:____:____:____:____:____ Practically never

13. When you have to talk in front of a class or group of people your own age, how afraid or worried do you usually feel?

Very ____:____:____:____:____:____:____ Not at all

14. When you are trying to win in a game or sport and you know that other people are watching you, how rattled or flustered do you usually get?

Very ____:____:____:____:____:____:____ Not at all

15. How much do you worry about whether other people will regard you as a success or a failure in your job or career?

Very ____:____:____:____:____:____:____ Not at all

16. When in a group of people, do you have trouble thinking of the right things to talk about?

Very often ____:____:____:____:____:____:____ Practically never

17. When you have made an embarrassing mistake or have done something that makes you look foolish, how long do you usually keep on worrying about it?

Very ____:____:____:____:____:____:____ Not at all

18. Do you find it hard to make talk when you meet new people?

Very often ____:____:____:____:____:____:____ Practically never

19. How often do you worry about whether other people like to be with you?

Very often ____:____:____:____:____:____:____ Practically never

20. How often are you troubled with shyness?

Very often ____:____:____:____:____:____:____ Practically never

21. When you are trying to convince other people who disagree with your ideas, how worried do you usually feel about the impression you are making?

Very ____:____:____:____:____:____:____ Not at all

22. When you think about the possibility that some of your friends or acquaintances might not have a good opinion of you, how concerned or worried do you feel about it?

Very ____:____:____:____:____:____:____ Not at all

23. How often do you feel worried or bothered about what other people think of you?

Very often ____:____:____:____:____:____:____ Practically never

24. Do you prefer to work with others rather than alone?

Very often ____:____:____:____:____:____:____ Practically never

25. How important is it to you to have some really close friends of your own age?

Very ____:____:____:____:____:____:____ Not at all

26. When you need to make an important decision do you usually work things out entirely for yourself rather than get someone else's advice?

Very often ____:____:____:____:____:____:____ Practically never

27. How often do you feel that you would prefer to become so absorbed in your own work or hobbies that you would not care about having any friends?

Very often ____:____:____:____:____:____:____ Practically never

28. How often do you wish that you would not have any responsibility to do things for other people?

Very often ____:____:____:____:____:____:____ Practically never

29. When you are invited to go someplace where there will be a large number of people, do you try to avoid going?

Very often ____:____:____:____:____:____:____ Practically never

30. Do you enjoy talking with people?

Very often ____:____:____:____:____:____:____ Practically never

31. How often do you have the feeling that you would be better off if you were to live in a place where there are no people around who know you?

Very often____:____:____:____:____:____:____Practically never

32. Do you prefer to spend your evenings alone?

Very often____:____:____:____:____:____:____Practically never

33. How often do you prefer to be by yourself rather than with other people?

Very often____:____:____:____:____:____:____Practically never

34. How often do you feel that you would prefer to be left alone by all your relatives and friends so that you would have no obligations toward others?

Very often____:____:____:____:____:____:____Practically never

DOGMATISM SCALE

1. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.

Agree very much___:___:___:___:___:___:___Disagree very much

2. My blood boils whenever a person stubbornly refuses to admit he's wrong.

Agree very much___:___:___:___:___:___:___Disagree very much

3. There are two kinds of people in this world; those who are for the truth and those who are against the truth.

Agree very much___:___:___:___:___:___:___Disagree very much

4. Most people just don't know what's good for them.

Agree very much___:___:___:___:___:___:___Disagree very much

5. Of all the different philosophies which exist in this world there is probably only one which is correct.

Agree very much___:___:___:___:___:___:___Disagree very much

6. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.

Agree very much___:___:___:___:___:___:___Disagree very much

7. The main thing in life is for a person to want to do something important.

Agree very much___:___:___:___:___:___:___Disagree very much

8. I'd like it if I could find someone who would tell me how to solve my personal problems.

Agree very much___:___:___:___:___:___:___Disagree very much

9. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.

Agree very much___:___:___:___:___:___:___Disagree very much

10. Man on his own is helpless and miserable creature.

Agree very much___:___:___:___:___:___:___Disagree very much

11. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.

Agree very much___:___:___:___:___:___:___Disagree very much

12. Most people just don't give a "damn" for others.

Agree very much___:___:___:___:___:___:___Disagree very much

13. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

Agree very much___:___:___:___:___:___:___Disagree very much

14. It is often desirable to reserve judgement about what's going on until one has had a chance to hear the opinions of those one respects.

Agree very much___:___:___:___:___:___:___Disagree very much

15. The present is all too often full of unhappiness. It is only the future that counts.

Agree very much___:___:___:___:___:___:___Disagree very much

16. The United States and Russia have just about nothing in common.

Agree very much___:___:___:___:___:___:___Disagree very much

17. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

Agree very much___:___:___:___:___:___:___Disagree very much

18. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven or Shakespeare.

Agree very much___:___:___:___:___:___:___Disagree very much

19. Even though freedom of speech for all groups is a worth while goal, it is unfortunately necessary to restrict the freedom of certain political groups.

Agree very much___:___:___:___:___:___:___Disagree very much

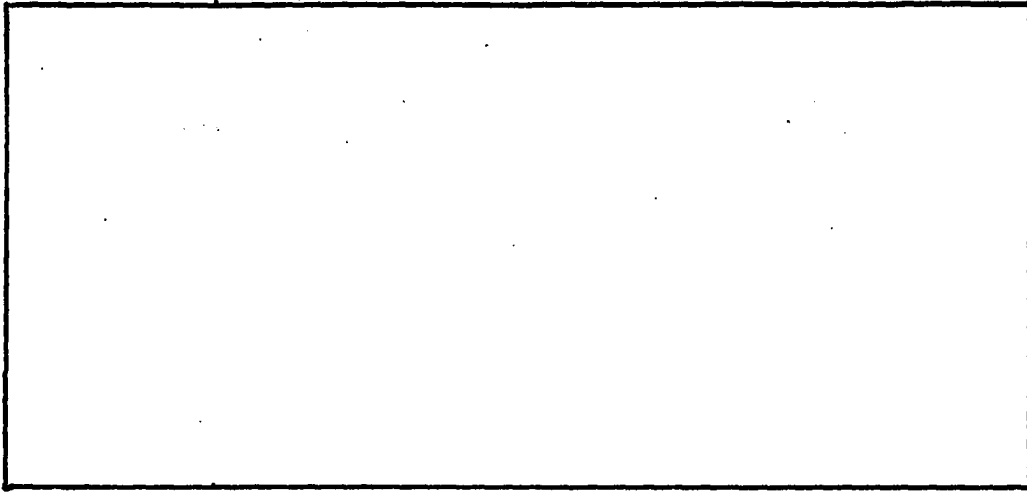
20. It is better to be a dead hero than a live coward.

Agree very much___:___:___:___:___:___:___Disagree very much

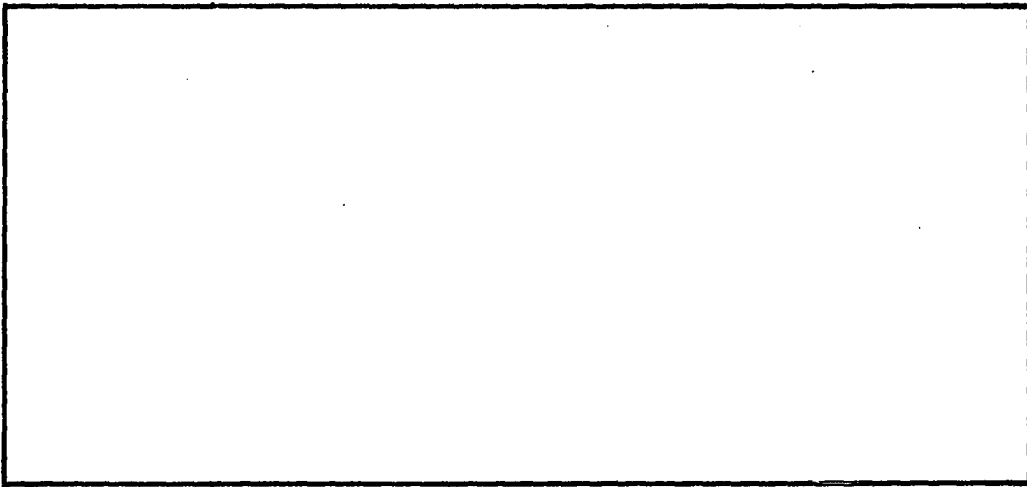
OPEN ENDED INTERVIEW

1. We are interested in knowing what you believe to be the purpose of this experiment. What do you think the experimenter was interested in?
2. During the experiment did you ever have the idea that its purpose might be something other than what I was telling you? Yes or No _____. If your answer is Yes, what was your idea?
3. Did you suspect any trickery; in other words, did you at any point think the experimenter was trying to deceive you in any way? If so, describe. If not, just put "no."
4. Do you recall seeing any of these questions before? Where? If so, why do you think we asked you to answer them again?
5. Were there any doubts in your mind concerning the authors of the articles you read? Did you at any time think they were fake articles? If so, tell us about your suspicions.
6. After reading the article against religion, or any of the other articles, and subsequently filling out the questionnaire, did you think we might be interested in determining whether your attitude toward religion, or any of the other issues, would change? Yes or No _____. When did you begin thinking that this was an attempt to change your attitude?

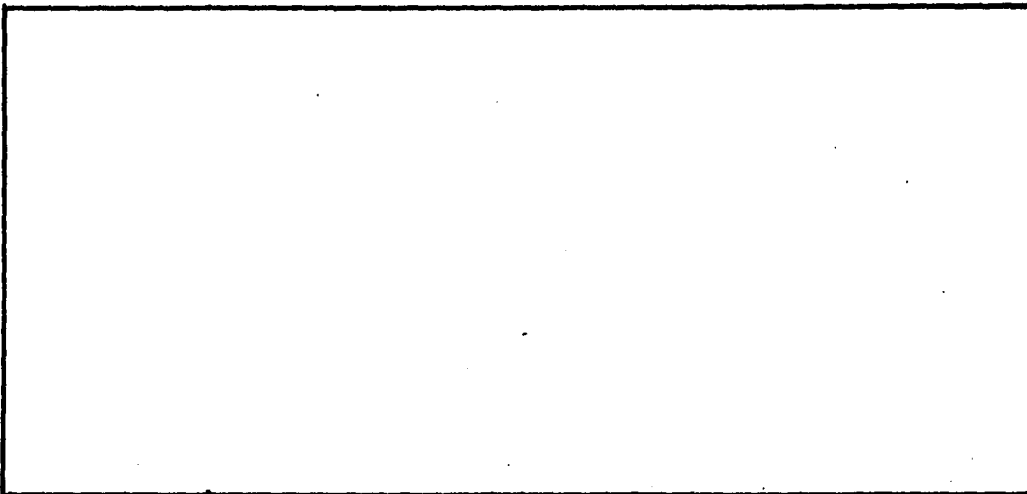
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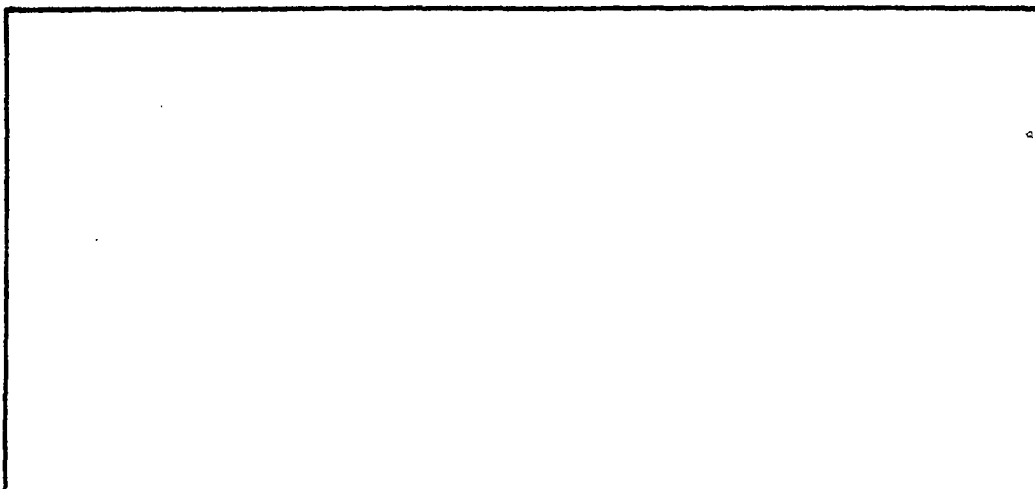
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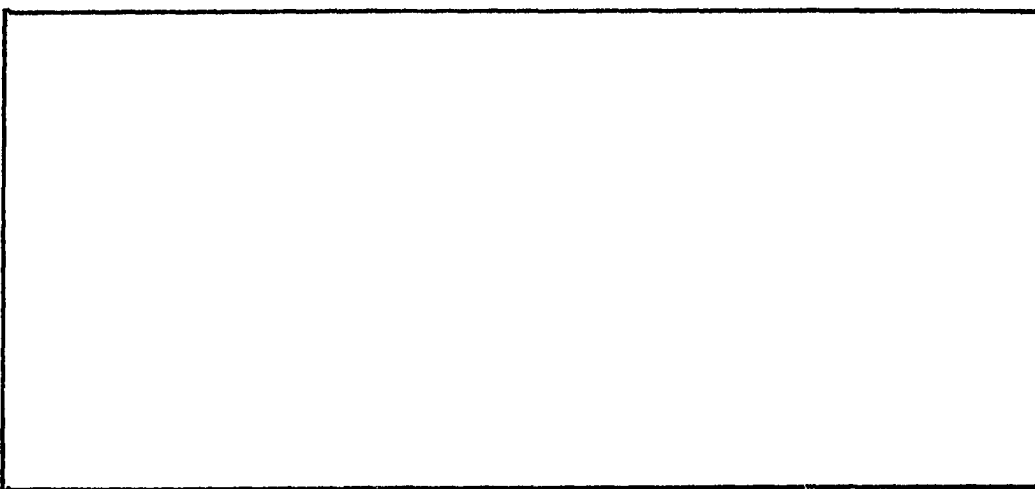
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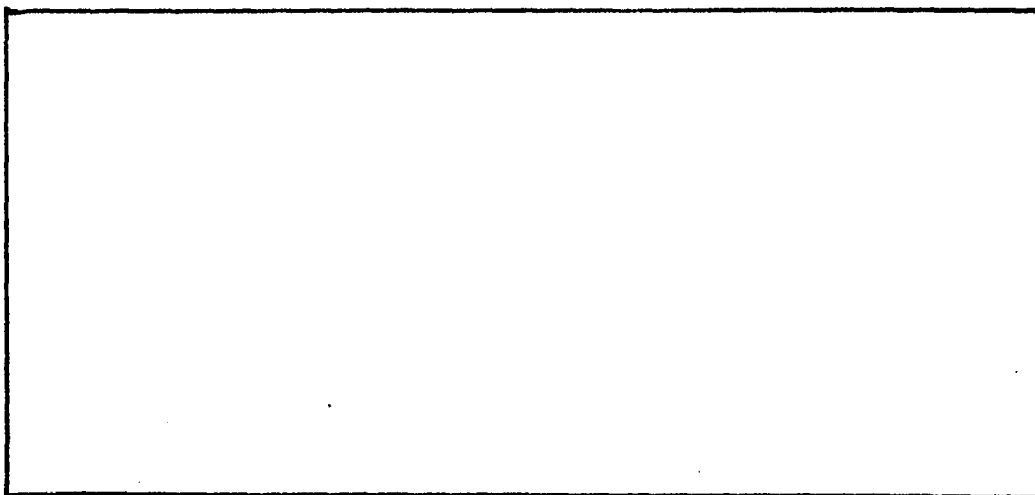
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5.



6.



APPENDIX E

IBM CARD FORMAT AND PRINTOUT OF DATA

Column
Key

PRETEST DATA FOR TOTAL POPULATION ON CARD 0

1-3.	Subject identification number
4-5.	Age
6.	Sex (1 = male; 2 = female)
7.	Education (1 = freshman; 2 = sophomore; 3 = junior; 4 = senior)
8.	Birth order (1 = only child; 2 = first born of two; 3 = second born of two; 4 = first born of three or more; 5 = middle born of three or more; 6 = last born of three or more)
9-11.	Survey No. I, need for achievement (success)
12-14.	Survey No. II, need for achievement (task)
15-16.	Total percentage score (need for achievement)
17-25.	Intercollegiate athletics (nine-point scale) (MA = 1; A = 2; MO = 3; O = 4)
26.	Most acceptable position on intercollegiate athletics
27.	Latitude of acceptance on intercollegiate athletics
28.	Most objectionable position on intercollegiate athletics
29.	Latitude of rejection on intercollegiate athletics
30.	Latitude of noncommitment on intercollegiate athletics
31-39.	Religion (nine-point scale)
40.	Most acceptable position on religion
41.	Latitude of acceptance on religion
42.	Most objectionable position on religion
43.	Latitude of rejection on religion
44.	Latitude of noncommitment on religion
45-53.	Vietnam (nine-point scale)
54.	Most acceptable position on Vietnam
55.	Latitude of acceptance on Vietnam
56.	Most objectionable position on Vietnam
57.	Latitude of rejection on Vietnam
58.	Latitude of noncommitment on Vietnam
59-74.	Blank

Column
Key

- 75. Ego involvement (I) (1 = HEI; 2 = LEI)
- 76. Source of the communication (for experimental group, 1 = HCS; 2 = LCS); (for control group, 3 = Posttest I; 4 = Posttest II; 5 = Posttest III)
- 77. Experimental and control groups (experimental groups = 1, 2, 3, 4; control groups = 6, 7)
- 78. Each subject (0-9)
- 79. Experimental and control groups (experimental group is 1; control groups with pretest = 2; control groups without pretest = 3)

PRETEST DATA ON SAMPLE POPULATION ON CARD 0

- 1-58,
- 75-79. Repeat of data on preceding card

PRETEST DATA FOR EXPERIMENTAL EXPOSURE ON CARD 1

- 1-3. Subject identification number
- 4. Rating of how well-written the article on athletics is (1-7)
- 5. Rating of how correct the article on athletics is (1-7)
- 6-7. Total of columns 4 and 5 (1-14)
- 8. Rating of how expert the author of the athletics article is (1-7)
- 9. Rating of how honest the author of the athletics article is (1-7)
- 10-11. Total of columns 8 and 9 (1-14)
- 12. Rating of how well-written the article on religion is (1-7)
- 13. Rating of how correct the article on religion is (1-7)
- 14-15. Total of columns 12 and 13 (1-14)
- 16. Rating of how expert the author of the religion article is (1-7)
- 17. Rating of how honest the author of the religion article is (1-7)
- 18-19. Total of columns 16 and 17 (1-14)
- 20. Rating of how well-written the article on TV and radio call-in programs is (1-7)

Column
Key

- 21. Rating of how correct the article on TV and radio call-in programs is (1-7)
- 22-23. Total of columns 20 and 21 (1-14)
- 24. Rating of how expert the author of the article on TV and radio call-in programs is (1-7)
- 25. Rating of how honest the author of the article on TV and radio call-in programs is (1-7)
- 26-27. Total of columns 24 and 25 (1-14)
- 28-74. Blank
- 75. Ego involvement (1 = HEI; 2 = LEI)
- 76. Source of the communication (for experimental group, 1 = HCS; 2 = LCS); (for control group, 3 = Posttest I; 4 = Posttest II; 5 = Posttest III)
- 77. Experimental and control groups (experimental groups = 1, 2, 3, 4; control groups = 6, 7)
- 78. Each subject (0-9)
- 79. Experimental and control groups (experimental group is 1; control groups with pretest = 2; control groups without pretest = 3)

PRETEST DATA FOR EXPERIMENTAL EXPOSURE ON CARD 2

- 1-79. Repeat of data on preceding card

POSTTEST FOR CONTROL GROUPS WITH PRETEST ON CARD 3

- 1-3. Subject identification number
- 4. MA position on athletics
- 5. LA for athletics
- 6. MO position on athletics
- 7. LR for athletics
- 8. LNC for athletics
- 9. MA position on religion
- 10. LA for religion
- 11. MO position on religion
- 12. LR for religion
- 13. LNC for religion
- 14. MA on TV-radio call-in programs
- 15. LA for TV-radio call-in programs
- 16. MO position on TV-radio call-in programs
- 17. LR for TV-radio call-in programs
- 18. LNC for TV-radio call-in programs

Column
Key

19. Attitude intensity toward religion (1-7)
20. Attitude intensity toward athletics (1-7)
21. Attitude intensity toward TV-radio call-in programs (1-7)
22. Rating of how important the issue of athletics is to the subject (1-7)
23. Rating of how important the issue of religion is to the subject (1-7)
24. Rating of how important the issue of TV-radio call-in programs is to the subject (1-7)
25. Number of hours per week the subject devoted to formal sports activities (1-9)
26. Number of hours per week the subject devoted to informal sports activities (1-9)
27. Number of hours per week the subject spent as a spectator of sports activities (1-9)
28. Number of hours per week the subject spent watching sports on TV (1-9)
- 29-30. Total number of hours the subject spent per week on athletics activities
31. Classification of the subject's religion (1 = Protestant; 2 = Catholic; 3 = Baptist; 4 = Jewish; 5 = Other; 6 = None)
32. How often the subject attends church services (1 = never; 2 = rarely; 3 = occasionally; 4 = about every two months; 5 = about once a month; 6 = twice a month; 7 = once a week; 8 = more than once a week)
33. Extent to which the subject participates in church activities other than attending services (1 = not at all; 2 = rarely; 3 = occasionally; 4 = quite often; 5 = very regularly)
- 34-35. Total of 32-33 (0-13)
36. How clearly the subject expressed himself on the subject of TV-radio call-in programs (1 = very unclear; 2 = unclear; 3 = not sure; 4 = clear; 5 = very clear)
37. How much time per day the subject has devoted to TV-radio call-in programs (1 = less than 15 minutes; 2 = 15 to 30 minutes; 3 = 30 to 45 minutes; 4 = 45 minutes to one hour; 5 = more than one hour)

Column
Key

- 38. Extent to which subject was involved in TV-radio call-in programs (hours per week)
- 39. Number of hours per week the subject spends listening to call-in programs
- 40-41. Total of columns 38-39
- 42-74. Blank
- 75. Ego involvement (1 = HEI; 2 = LEI)
- 76. Source of the communication (for experimental group, 1 = HCS; 2 = LCS); (for control group, 3 = Posttest I; 4 = Posttest II; 5 = Posttest III)
- 77. Experimental and control groups (experimental groups = 1, 2, 3, 4; control groups = 6, 7)
- 78. Each subject (0-9)
- 79. Experimental and control groups (experimental group is 1; control groups with pretest = 2; control groups without pretest = 3)

POSTTEST DATA ON CARD 4

- 1-3. Subject identification number
- 4. MA position on athletics
- 5. LA for athletics
- 6. MO position on athletics
- 7. LR for athletics
- 8. LNC for athletics
- 9-10. Semantic differential for the character of the author
- 11-12. Semantic differential for the authority of the author
- 13-14. Semantic differential for the content of the article
- 15. Author's MA position for athletic article
- 16. Author's LA for athletics article
- 17. Author's MO position for athletics article
- 18. Author's LR for athletics article
- 19. Author's LNC for athletics article
- 20. MA position on religion
- 21. LA for religion
- 22. MO position on religion
- 23. LR for religion
- 24. LNC for religion

Column
Key

- 25-26. Semantic differential for the character of the author of the religion article
- 27-28. Semantic differential for the authority of the author of the religion article
- 29-30. Semantic differential for the content of the article on religion
- 31. Author's MA position on religion
- 32. Author's LA for religion
- 33. Author's MO position on religion
- 34. Author's LR for religion
- 35. Author's LNC for religion
- 36. MA position on TV-radio call-in programs
- 37. LA for TV-radio call-in programs
- 38. MO position on TV-radio call-in programs
- 39. LR for TV-radio call-in programs
- 40. LNC for TV-radio call-in programs
- 41-42. Semantic differential for the character of the author of the article on TV-radio programs
- 43-44. Semantic differential for the authority of the author of the article on TV-radio programs
- 45-46. Semantic differential for the content of the article on TV-radio call-in programs
- 47. Author's MA position on TV-radio programs
- 48. Author's LA for TV-radio programs
- 49. Author's MO position on TV-radio programs
- 50. Author's LR for TV-radio programs
- 51. Author's LNC for TV-radio programs
- 52. Attitude intensity toward religion (1-7)
- 53. Attitude intensity toward athletics (1-7)
- 54. Attitude intensity toward TV-radio call-in programs
- 55. Rating of how important the issue of athletics is to the subject (1-7)
- 56. Rating of how important the issue of religion is to the subject (1-7)
- 57. Rating of how important the issue of TV-radio call-in programs is to the subject (1-7)
- 58. Number of hours per week the subject devoted to formal sports activities (1-9)
- 59. Number of hours per week the subject devoted to informal sports activities (1-9)

Column
Key

60. Number of hours per week the subject spent as a spectator of sports activities (1-9)
61. Number of hours per week the subject spend watching sports on TV (1-9)
- 62-63. Total number of hours the subject spent per week on athletic activities
64. Classification of the subject's religion (1 = Protestant; 2 = Catholic; 3 = Baptist; 4 = Jewish; 5 = Other; 6 = None)
65. How often the subject attends church services (1 = never; 2 = rarely; 3 = occasionally; 4 = about every two months; 5 = about once a month; 6 = twice a month; 7 = once a week; 8 = more than once a week)
66. Extent to which the subject participates in church activities other than attending services (1 = not at all; 2 = rarely; 3 = occasionally; 4 = quite often; 5 = very regularly)
- 67-68. Total of 65-66 (0-13)
69. How clearly the subject expressed himself on the subject of TV-radio call-in programs (1 = very unclear; 2 = unclear; 3 = not sure; 4 = clear; 5 = very clear)
70. How much time per day the subject has devoted to TV-radio call-in programs (1 = less than 15 minutes; 2 = 15 to 30 minutes; 3 = 30 to 45 minutes; 4 = 45 minutes to one hour; 5 = more than one hour)
71. Extent to which subject was involved in TV-radio call-in programs (hours per week)
72. Number of hours per week the subject spends listening to call-in programs
- 73-74. Total of columns 71-72
- 75-79. Same as for previous data

POSTTEST DATA ON CARD 5

- 1-79. Repeat of data on preceding card

POSTTEST DATA ON CARD 6

- 1-3. Subject identification number

Column
Key

4-6.	Retention questionnaire; multiple choice questions dealing with author (1 = right; 0 = wrong)
7.	Total of columns 4-6 (0-3)
8-10.	Retention questionnaire dealing with content of the article on athletics (1 = right; 0 = wrong)
11.	Total of columns 8-10 (0-3)
12-14.	Retention questionnaire dealing with author of the article on religion (1 = right; 0 = wrong)
15.	Total of columns 12-14
16-18.	Retention questionnaire dealing with content of the article on religion (1 = right; 0 = wrong)
19.	Total of columns 16-18 (0-3)
20-22.	Retention questionnaire dealing with author of the article on TV-radio call-in programs (1 = right; 0 = wrong)
23.	Total of columns 20-22 (0-3)
24-26.	Retention questionnaire dealing with content of the article on TV-radio call-in programs (1 = right; 0 = wrong)
27.	Total of columns 24-26 (0-3)
28-30.	Total of answers 1-23 on self-esteem questionnaire
31-32.	Total of answers 24-34 on self-esteem questionnaire
33-35.	Total of columns 28-32
36-55.	Scores on questions 1-20 on dogmatism scale (1-7)
56-58.	Total of columns 36-55 (questions 1-20)
59-61.	Scores on awareness scale (1 = answered #1 correctly; 2 = answered #2 correctly; 3 = answered #3 correctly; 4 = answered #4 correctly; 5 = answered #5 correctly; 6 = answered #6 correctly)
62-74.	Blank
75-79.	Same as in preceding data

POSTTEST DATA ON CARD 7

1-79. Same as data on cards 4 and 5

POSTTEST DATA ON CARD 8

1-79. Same as data on card 6

Column
Key

POSTTEST DATA ON CARD 9

1-3.	Subject identification number
4-26.	Ratings of scores on self-esteem questionnaire (questions 1-23; ratings from 1-7)
27-29.	Total of columns 4-26
30-40.	Ratings of scores on self-esteem questionnaire (questions 24-34; ratings from 1-7)
41-42.	Total of columns 30-40
43-45.	Total of columns 4-40 (questions 1-34)
46-74.	Blank
75-79.	Same as for preceding data

PRETEST DATA FOR THE TOTAL POPULATION ON CARD 0

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PRETEST DATA FOR SAMPLE POPULATION ON CARD 0

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EXPERIMENTAL EXPOSURE ON CARD 1

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EXPERIMENTAL EXPOSURE ON CARD 2

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788630954097512651144084307	114412
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233551044085510440833063306	114612
443761367135308230577147714	114712
392230532051203320577147714	114812
593530835086511551065114509	124012
288551045095308350865114509	124112
538551032054610350854094408	124212
584551046105611561166125712	124312
725661257125510440865115611	124412
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180530833065409340755104509	124612
673410544087714440874114509	124712
144540944084307340755104509	124812
417620823057613561167137714	214012
295330632056612661223052204	214112
343641067137714771456116713	214212
269561156114610540933064307	214312
301130425076410561176135510	214412
391651155106511551065115611	214512
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271651156112204430754093407	214712
691641046106612661274114509	214812
439420633064408240666124610	224112
675651156115611461066126511	224212
342540944085510440855104410	224312
742450935086511450956115510	224412
162641053086612561176136713	224512
635420622045611461053085308	224612
692551074116309330666124509	224712
405540944084509440833063306	224812

POSTTEST FOR CONTROL GROUPS WITH PRETEST ON CARD 3

35424950228429415066766600100138513210000	136023
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52724950139516314275657602481437411310000	136223
62824960139514315166566202381117108310101	136323
46634960159504495076267503781838412310404	136423
52343951139703494175537204220858412110000	136523
27724941139605514076267109992738412110012	136623
17752934109906214374337300000038513110000	136723
54323951139513493276467500210338513310202	136823
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257723
257823

POSTTEST FOR CONTROL GROUPS WITHOUT PRETEST ON CARD 3

90032961139607414175357609201138513310000	136033
90124970149705295276457400220438513310000	136133
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88334950239604495075436408431538513110000	146233
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257733
257833

[illegible]

POSTTEST DATA ON CARD 5

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POSTTEST DATA ON CARD 6

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71111131012111301121113001108129110576513425771251125510754	123116
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37311131012011200111113010109928127342322322234443454220606	213116
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09810121113000001011012011207634110631716321263271155560736	213516
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68410121113110211021113011208141122554334234352351252340681	223016
57310010011001110010101011208352135666717722276455334560946	223116
36800111012010101121102011210743150525512622265251221110586	223216
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78311131012101201010000101208032112222413222465251234440606	223416
14210121113101201120000111308837125573215532673221234240696	223516
61411131012101201120112011207436110321612612252332235330576	223616
56211131012110201121113011212958187155662277776763177721014	223716
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POSTTEST DATA ON CARD 7

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