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RUDIN, Lawrence Alan, 1943-
RELATIONSHIP BETWEEN THE POINT FALLACY
AND LATITUDE DIMENSIONS OF ATTITUDE
CHANGE EXAMINED BY USE OF TWO-SIDED,
WRITTEN, MIXED COMMUNICATIONS.

University of Oklahoma, Ph.D., 1970
Psychology, experimental

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THE UNIVERSITY OF OKLAHOMA
GRADUATE COLLEGE

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OF ATTITUDE CHANGE EXAMINED BY USE OF TWO-SIDED,
WRITTEN, MIXED COMMUNICATIONS

A DISSERTATION
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LAWRENCE ALAN RUDIN
Norman, Oklahoma
1970

RELATIONSHIP BETWEEN THE POINT FALLACY AND LATITUDE DIMENSIONS
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WRITTEN, MIXED COMMUNICATIONS

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CHAPTER I

INTRODUCTION AND PROBLEM

Historically, four major techniques have been developed in one line of research for the evaluative measurement of attitudes and attitude change, notably Thurstone (Thurstone & Chave, 1929), Likert (1932), Guttman (1947, 1950), and Sherif (Sherif, Sherif, & Nebergall, 1965). Each of these methods is used today, although modifications have been made.

Thurstone Method

Conceptual framework. In 1929, Thurstone and Chave developed a method of attitude measurement based on the psychophysical method of equal appearing intervals. They classified psychologists who were interested in measurement into two groups: (1) those who adhered to traditional psychophysical methods, and (2) those interested in educational scales without regard for psychophysical methods. The Thurstone and Chave technique was an attempt to bridge the gap between the two groups, and measure social values by psychophysical means.

Attitude was defined by Thurstone and Chave as, ". . . the sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specific topic (1929, pp. 6-7)." As an example, they indicate that a man's attitude toward pacifism would be ". . . all that he thinks and feels about peace and war (p. 7)." An opinion was defined as the ". . . verbal expression of attitude. . . . An opinion symbolizes an attitude (p. 7)." Thus, what is measured is opinion, not attitude; the attitude is inferred from the opinion. Thurstone fully realized that what one says he will do and what one does can be two different things. However, since prediction of overt action was not being sought, expression of opinion was suitable. Further, it was realized that what a person says may not be what he believes. He stated that: "Even if they are intentionally distorting their attitudes, we are measuring at least the attitude which they are trying to make people believe that they have (Thurstone & Chave, 1929, p. 9)." Further, they state:

All that we can do with an attitude scale is to measure the attitude actually expressed with the full realization that the subject may be consciously hiding his true attitude or that the social pressure of the situation has made him really believe what he expresses. This is a matter for interpretation. It is another problem to interpret in each case the extent to which the subjects have expressed what they really believe. All that we can do is to minimize as far as possible the conditions that prevent our subjects from telling the truth, or else to adjust our interpretation accordingly (Thurstone & Chave, 1929, p. 10).

Thurstone believed that the individual's judgment process was linear in nature. He believed that perception of qualities such as beauty, mechanical skill, etc. are placed, psychologically, on a linear continuum; and that any one aspect of quality is judged as being more

(something) than this, or less (something) than that. Thus, with the conceptualization of a linear judgmental process, the method of equal appearing intervals was chosen as a base for the measurement of attitudes.

Technique of measurement. In constructing an attitude scale, statements are formed from having several people write their opinions on an issue, and from checking current literature on the issue. Statements are then selected by the following criteria:

1. The statements should be as brief as possible so as not to fatigue the subjects who are asked to read the whole list.
2. The statements should be such that they can be indorsed or rejected in accordance with their agreement or disagreement with the attitude of the reader. Some statements in a random sample will be so phrased that the reader can express no definite indorsement or rejection of them.
3. Every statement should be such that acceptance or rejection of the statement does indicate something regarding the reader's attitude about the issue in question.
4. Double-barreled statements should be avoided except possibly as examples of neutrality when better neutral statements do not seem to be readily available. Double-barreled statements tend to have high ambiguity.
5. One must insure that at least a fair majority of the statements really belong on the attitude variable that is to be measured. If a small number of irrelevant statements should be either intentionally or unintentionally left in the series, they will be automatically eliminated by an objective criterion, but the criterion will not be successful unless the majority of the statements are clearly a part of the stipulated variable (Thurstone & Chave, 1929, pp. 22-23).

In addition to these criteria, Thurstone and Chave set up six informal criteria for item selection.

1. As far as possible the opinions should reflect the present attitudes of the subject, rather than his attitudes in the past. By wording the opinions in the present tense, one

avoids the situation in which the subject might indorse two conflicting opinions, one referring to his past attitude, and one to his present attitude. The scale values of the subject should naturally describe his present attitude.

2. It has been found that double-barreled statements tend to be ambiguous. The material should be edited so that each opinion expresses as far as possible only one thought or idea. The subject is confused in reading a double statement in which he might want to indorse one idea but not the other. . . .
3. One should avoid statements applicable to a very restricted range of indorsers. . . .
4. Each opinion selected for the attitude scale should preferably be such that it is not possible for subjects from both ends of the scale to indorse it. Such opinions will be canceled by the objective criteria, but when this effect is conspicuous the statement might well be discarded at the start.
5. As far as possible the statements should be free from related and confusing concepts. . . .
6. Other things being equal, slang may be avoided except where it serves the purpose of describing an attitude more briefly than it could otherwise be stated. For example, to say that most sermons are "all bunk" may be justified if it should be considered a natural way of expressing an attitude which is to be represented on the scale (1929, pp. 57-58).

Once formed, statements are given to a large number of judges (in their religious attitude scale, Thurstone and Chave, 1929, used 300 judges) who sort the statements, which appear one per slip of paper, into eleven piles. The first pile represents those statements judged most favorable to the issue; the fifth pile represents statements neutral to the issue; and the last pile represents statements most anti the issue. It is important to note that judges are instructed not to give their opinions of agreement-disagreement with each statement, but to judge the statements as to the statement's favorableness-unfavorableness to the

issue. The scale value for each statement is the median placement or 50% level across judges. Two criteria are used for acceptance of statements for the final scale. The first criterion is a measure of ambiguity. This measurement consists of a visual analysis of the frequency distribution for each item in terms of the scale values within the first and third quartiles (Q-values). Those items which have high Q-values are rejected. Thus, only items which have low interjudge variability are accepted for use in the attitude scale. In addition, judges who place large numbers of items (30 or more for the 130 item religious attitude scale used by Thurstone & Chave, 1929) into any one pile are eliminated. This procedure, termed the criterion of irrelevance, eliminates judges who fail to understand directions or sort carelessly. By using these two criteria, the final scale is formed, and presented to subjects in random order. Subjects are asked to check each statement with which they agree, and a subject's score is the mean of the scale values for the statements accepted.

Thurstone and Chave indicated that this type of measurement scale would yield four indexes of attitude:

1. the average or mean attitude of a particular individual on the issue at stake; [mean scale values of acceptances]
2. the range of opinion that he is willing to accept or tolerate; [individual variability]
3. the relative popularity of each attitude of the scale for a designated group, as shown by the frequency distribution for that group; and
4. the degree of homogeneity or heterogeneity in the attitudes of a designated group on the issue, as shown by the spread or dispersion of its frequency distribution (1929, p. 16).

It is interesting to note that individual variability (#2 above) was not analyzed in the original study. Further, Thurstone (in the original study) asked subjects to indicate the one statement which best represented their attitudes towards the church, but indicated that this would not be done in future studies, and no analysis of this variable was reported.

Thus, the Thurstone scale construction technique is a card sort technique whereby items are selected and assigned scale values by judges' ratings. Statements selected for the final scale are approximately equal units apart. Subjects check each statement with which they agree, and a subject's score is the mean scale value of the accepted statements.

Likert Method

Conceptual framework. Following Thurstone's method of attitude measurement, Likert (1932) developed a technique which was designed to alleviate some of the problems inherent with Thurstone's technique. Likert noted that Thurstone's assumption that scale values of items were not related to the judges' attitudes toward the issue was not verified. The Likert method was developed as a solution to this problem.

According to Likert, definitions of attitudes were of two types. First, attitudes were sets toward overt action; and second, attitudes were verbal substitutes for overt action. Likert preferred the first definition, and defined the term according to the Century Dictionary and Cyclopedia of 1904-1906 as ". . . relation of persons viewed as the expression of, or as affecting, feeling, opinion, intentions, etc. (Likert, 1932, p. 9)." Inherent in Likert's concept was that attitudes cluster or group around a central attitude, and it is this central attitude that

is measurable. Thus, attitude scales are not thought of as being unidimensional; rather, the attitude measured is considered to be general rather than specific. Paper and pencil tests to measure attitudes are an indirect way of measuring attitudes, but are used due to their ease of application, according to Likert.

Technique of measurement. Statements are originally selected in the same manner as those of Thurstone's e.g., from current literature, and by having people write their opinions. Statements are then edited by the following criteria:

1. It is essential that all statements be expressions of desired behavior, not statements of fact. Two persons with decidedly different attitudes may, nevertheless, agree on questions of fact. Consequently, their reaction to a statement of fact is no indication of their attitudes. . . . In dealing with expressions of desired behavior rather than expressions of fact the statement measures the present attitude of the subject and not some past attitude. . . . A very convenient way of stating a proposition so that it does involve desired behavior is by using the term should. . . .
2. The second criterion is the necessity of stating each proposition in clear, concise, straightforward statements. Each statement should be in the simplest possible vocabulary. No statement should involve double negatives or other wording which will make it involved or confusing. Double-barreled statements are most confusing, and should always be broken in two. . . .
3. In general, it seems desirable to have each statement so worded that the modal reaction to it is approximately in the middle of the possible responses.
4. To avoid any space error or any tendency to a stereotyped response, it seems desirable to have the different statements so worded that about one-half of them have one end of the attitude continuum corresponding to the left or upper end of the reaction alternatives and the other half have the same end of the attitude continuum corresponding to the right or lower part of the reaction alternatives. . . . These two kinds of statements ought to be distributed throughout the attitude test in a chance or haphazard manner. [In other words, half the

items should be pro the issue, and half anti the issue] (1932, pp. 44-46, emphasis in original).

The edited items are then given to subjects who indicate their position along a five point scale from strongly agree to strongly disagree. Each statement is followed by a five point continuum, such that each statement is rated by subjects, rather than having subjects check only those statements with which they agree as in the Thurstone scale. Item analysis is then performed to see if (1) the scale values are correct, and (2) if the statements are differentiating. Undifferentiating is likened to Thurstone's concept of ambiguity. Items which undifferentiate are omitted as they measure "extraneous" attitudes.

Likert indicates that enough items should be chosen as to insure reliability by the split-half method (Cronbach, 1960, indicates that at least 30 items are necessary in order to use the split-half method). Once chosen, the scale is given to subjects who indicate their choice of the five alternatives for each item. Each item is scored one through five. If the item is pro the issue, a score of five is given the "strongly agree" position, down through a score of one for "strongly disagree" position, and vice versa for items anti the issue. As an example, two statements used in the original Likert scale on attitudes toward Negroes are reproduced below. Their scale values are in parentheses below each alternative.

All negroes belong in one class and should be treated in about the same way.

Strongly Approve	Approve	Undecided	Disapprove	Strongly Disapprove
(1)	(2)	(3)	(4)	(5)

Where there is segregation, the negro section should have the same equipment in paving, water, and electric light facilities as are found in the white districts.

Strongly Approve	Approve	Undecided	Disapprove	Strongly Disapprove
(5)	(4)	(3)	(2)	(1)

(Likert, 1932, p. 19).

An individual's score is calculated by summing his scores over items, and finding the mean. In the same manner, an overall group score can also be determined.

Likert originally used another method of establishing a subject's score, which he termed the "sigma method (Likert, 1932, p. 21)." However, correlating the two methods indicated that one was as good as the other, and the method described here was chosen. It is also interesting that in correlating Likert's method of item analysis with Thurstone's method of internal consistency (low Q-value), Likert found that one was as good as the other; and recommended the Thurstone method due to its time advantage. However, this method is not reported in texts today (Nunnally, 1959; Sherif & Sherif, 1956, 1969; Anastasi, 1968; Secord & Backman, 1964).

Guttman Method

Conceptual framework. Laying the basis for the "scalogram" or "Cornell" technique of attitude measurement, Guttman (1950) mentioned that opinion referred to verbal behavior, while attitude referred to both verbal and nonverbal behavior. Guttman made no attempt to actually define the term attitude, but suggested that any definition of attitude should follow two premises: (1)". . . a scientific concept must be defined in terms of observations: it may be directly defined in terms of

the observations, or by operations on the observations (p. 49)," and (2)". . . a definition is scientifically useful only in so far as it leads to objective research (p. 49)." Guttman inferred that there were two concepts of the term attitude, one dealing with attitude as a pre-disposition or set to act in a particular way toward something; and the other dealing with attitude as an inference from previous behavior. According to Guttman, underlying these concepts is the notion of predictability, which is not sufficient to define the concept of attitude due to the following: ". . . (a) nonattitudinal variables also predict: and (b) to regard empirical correlates of an attitude as part of its definition makes nonsense of research (p. 50)." Thus, for Guttman, prediction is a correlate to the definition of attitude, not a component part. Prediction also necessitates a workable definition of the criterion to be predicted. Due to socially desirable behavior, attitudes will not necessarily predict some criteria. Thus, Guttman proposed that a definition of attitude should exclude a criterion and prediction. In scalogram analysis, ". . . the universe of content is defined apart from any ideas of predicting outside variables. Then, if the content is scalable, it turns out that any outside variable whatsoever can have its maximum predictability determined in a very easy fashion (p. 51, emphasis in original)."

Guttman's (1950) definition of attitude as a ". . . delimited totality of behavior with respect to something (p. 51) " meets the requirement of having an observational base. The usefulness of this type of definition depends on how complicated the relationships are between behavioral acts. If the pattern of interrelationships is not a simple

one, then the study of behavior would be too complex to be manageable. In this case, a "subuniverse (Guttman, 1950, p. 52)" would have to be defined which would be manageable. The total attitude, then, would be the interrelationships between all the subuniverses. A universe could also be a subuniverse of a larger universe. For example, attitudes toward Negroes could consist of subuniverses such as attitudes toward Negroes with respect to jobs, attitudes toward Negroes as neighbors, attitudes toward Negroes with respect to education, etc. These subuniverses together would make up an attitude universe toward Negroes. This general attitude toward Negroes could then be considered a subuniverse of a larger attitudinal area such as attitudes toward ethnic or minority groups.

Technique of measurement. With the above considerations in mind, Guttman noted two problems with measurement procedures: "(1) the determination of unidimensionality and (2) the determination of a fixed point of reference along such a single dimension (Guttman, 1950, p. 46)." To be meaningful, a measurement must be unidimensional, and once a single dimension is found, there must be an anchorage point for the continuum. Scalogram analysis was developed in order to test qualitative statements for unidimensionality, while intensity function analysis was developed to find an objective cutting point for the scale.

A universe is scalable, according to Guttman (1947), if it has reproducibility, e.g., if ". . . it is possible to rank the people from high to low in such a fashion that from the person's rank alone we can reproduce his response to each of the items in a simple fashion (p. 249)."

Items are chosen for the Guttman scale in the same manner as in the

Likert or Thurstone scales. They are considered to be a sample from a larger population of items chosen from written statements of subjects and current periodicals.

Blalock and Blalock (1968) indicate the purpose of scalogram analysis as follows:

The aim of scalogram analysis in any particular application is to determine whether a set of respondents and a set of items can be logically ordered together on a scale in terms of a property described in variable degree by the respondents when they decide to accept or reject each item (p. 98).

Each statement is rated on one of five choices from "strongly agree" to "strongly disagree" with "undecided" in the center. While this is similar to the Likert technique, rating categories are not distributed along a continuum in the Guttman method as they are in Likert's. Preliminary weights are arbitrarily assigned to each response category as 4, 3, 2, 1, 0, with four being the weight for the category most favorable to the issue, and zero assigned to the category least favorable to the issue. Thus, as in the Likert scale, the response category "strongly agree" could be assigned either a weight of four or a weight of zero, depending on whether the item was pro or anti the issue. Each subject is then assigned a total score which is the sum of all the ratings. Subjects are then ordered in a matrix from high to low total scores along the vertical dimension, and items and their possible weights along the horizontal dimension. Each subject has a mark along his row which corresponds to the rating he gave for each item. Thus the matrix is a complete record of how all individuals respond to the items on the questionnaire. An example of this can be seen in Guttman's Table 1, which is the response matrix for a scale concerning attitudes towards a text book, A Nation of Nations

(Guttman, 1947, p. 254-255). Along the horizontal dimension, the seven items are represented with each response alternative weight directly underneath. Along the vertical dimension is each subject's total score ordered from high to low.

After setting up the matrix, the test for scalability is performed. If the items are scalable, each item should have a simple pattern of checks. Thus, for each item, those subjects who have chosen the alternative with a weight of four should be higher in the column than those subjects who have chosen another alternative. Accordingly, those subjects who have chosen alternative three should fall below those who have chosen weight four, and above those for alternative weight two, and so on. The number of errors across the entire questionnaire should not exceed 10% of all responses. Thus a reproducibility coefficient of 90% is required to assume scalability of a questionnaire. Items which are not scalable can be collapsed by response categories in order to achieve scalability, since it is assumed that if a pattern of responses does not emerge, no differentiation is being made across subjects for the response alternatives.

Once scalability is verified, the intensity function can then be applied. It should be noted that only if an attitude is scalable can the intensity function be applied. In other words, it can not be said that a person is 'more' or 'less' pro or anti an issue unless the attitude is scalable. The intensity function is found by rescoring the content questions by assigning weights as follows: "strongly agree" and "strongly disagree" receive a weight of 2; "agree" and "disagree" receive a weight of one; "undecided" receives a weight of zero. The intensity function is

then found by plotting the obtained intensity scores against the content scores (scale scores). The resulting scattergram should yield a U-shaped curve if the intensity function is scalable. The low point in the curve marks the point at which those to the left can be considered to be in favor of the issue, while those to the right are against the issue.

Sherifian Method

Conceptual framework. In laying the basis for a new theory and method of measuring attitudes, Sherif (Hovland & Sherif, 1952; Sherif & Hovland, 1953; Sherif & Hovland, 1961; Sherif & Sherif, 1956; Sherif & Sherif, 1969; Sherif, Sherif, & Nebergall, 1965) has noted certain problems underlying each of the above types of attitude scales. Sherif's main objection to Thurstone's scaling method is in Thurstone's assumption that judges' own attitudes do not affect their classification of the statements they are judging. Thurstone stated: ". . . if the scale is to be regarded as valid, the scale values of the statements should not be affected by the opinions of the people who help to construct it . . . (p. 92)". However, he then added: ". . . until experimental evidence may be forthcoming, we shall make the assumption that the scale values of the statements are independent of the attitude distribution of the readers who sort the statements (Thurstone & Chave, 1929, p. 92)." Support came from Hinckley (1932) who developed a 114 statement attitude scale toward Negroes using the Thurstone technique. Hinckley observed that the criterion for irrelevancy (eliminating judges who placed 30 or more statements into any one category) did indeed eliminate careless subjects. However, Sherif (Hovland & Sherif, 1952; Sherif & Hovland, 1953) replicated

Hinckley's study, hypothesizing that elimination by the criterion of irrelevance would omit the subjects most ego-involved (most strongly committed) to the Negro issue. Sherif did find that those subjects who were highly committed shifted neutral items toward the extreme, thus piling up items in the extreme categories. These results were supported by Vaughan (1961), who studied attitudes toward Mexican-Americans originating near the Texas-Mexican border. Thus, Sherif contends that a person's own attitude toward an issue will serve as an anchoring point for judging other related stimuli. Sherif offers the following generalizations about judgments of individuals with different attitudes toward related stimuli:

1. Almost everyone places strongly worded, unequivocal statements of extreme positions into extreme categories consistently and with low variability. . . .
2. The placement of items intermediate to the clear-cut extremes differs for highly ego involved persons and less involved or noncommitted persons.
3. The distributions of judgments by a highly involved person are bimodal, the concentration of judgments into categories with which he strongly agrees and disagrees occurring at the expense of categories intermediate to them.
4. The bimodality of the distributions is achieved by systematic variations in judgment of intermediate items that are equivocal, vague, or open to alternative interpretation.
5. The direction of the systematic shifts depends on the discrepancy between the statement and the person's own position on the issue, which serves as a major anchor in categorizing such statements. Statements near the individuals own position are assimilated toward it. . . . If his stand is extreme, he rates neighboring items as more extreme than someone not involved with the issue. . . . On the other hand, statements differing considerably from the person's own stand are contrasted to his stand, seen as more discrepant and bunched into categories that are highly objectionable to him. . . . (Sherif & Sherif, 1969, pp. 342-343, emphasis in original).

Thus, the assumption that the equal interval scale can be derived without considering the judges' attitudes is not valid. It should be noted that Sherif concludes that the Thurstone technique is not invalid within a rather homogeneous population (Sherif & Sherif, 1969, pp. 343-344). However, if the homogeneous population is extreme, judges could still be thrown out due to the criterion of irrelevance. This could easily result in throwing out most of the judges as being careless when in fact they are merely highly involved; and, could certainly lead to a scale that was not seen as equal interval, but which would be conceived as such by the experimenter.

It might also be noted that Hinckley (1963) did a rebuttal study in which he concluded that Sherif was in error, i.e., that judges' attitudes do not affect their classification of statements. However, Sherif makes no mention of this follow-up study (Sherif & Sherif, 1969), and it appears that it is generally agreed that judges' attitudes do affect their judgments of statements.

In criticizing the Guttman method of scale construction Sherif (Sherif & Hovland, 1961) noted that psychosocial scales are not always cumulative. For instance, there is no guarantee that highly involved, extreme subjects will accept a moderate statement on their side of the issue. It is quite probable that an individual who is highly committed to desegregation would not accept a moderately pro integration statement (such as: "Desegregation should proceed at a regular, but reasonable pace."). A black militant certainly would reject this type of tokenism. However, an individual who is in the middle of the road on the issue of segregation, could consider this the most extreme statement he could

endorse. In this case, then, the Guttman method would work for the moderate individual, but not for the highly committed one. In addition, Selltiz, Jahoda, Deutsch, and Cook (1961) indicate that scoring procedures are not necessarily uniform across samples on the same issue, while Hayes (1964) has indicated that context effects produce differences in reproducibility of items.

In theory, the idea of the Guttman method of ranking individuals on a single dimension is highly desirable. However, in practice, reproducibility is usually a difficult criterion to meet, and usually results in a smaller number of items to meet the criterion. Thus, Sherif (Sherif & Sherif, 1969) concludes: "The cumulative scale model . . . is at its best when used for the study of attitudes toward social dimensions with cumulative properties - for example, social distance or role and status expectations in large organizations (p. 375)."

According to Sherif (Sherif & Hovland, 1961; Sherif & Sherif, 1969; Sherif, Sherif & Nebergall, 1965), underlying all three methods of scale construction is an error. This could be termed the point fallacy. Point fallacy is the incorrect assumption that an individual's attitude can be adequately measured and described by a single point or average score along a scale. This topic will be discussed in detail below.

With the above problems inherent in the three major types of attitude scales, the Sherif social judgment-involvement approach was developed.

Sherif and Sherif (1969) define attitude as

. . . the individual's set of categories for evaluating a domain of social stimuli (objects, persons, values, groups, ideas, etc.) which he has established as he learns about that domain (in interaction with other persons, as a general rule) and which relate him to subsets within the domain

with varying degrees of positive or negative affect (motivation-emotion) (pp. 336-337).

Further, there are six criteria for distinguishing attitudes from other internal factors such as expectancies or sets. These criteria are

1. Attitudes are not innate. Attitudes belong to the domain of human motivation the initial appearance of which depends upon learning. They are acquired during the individual's life history and are not carried genetically by the organism or in any kind of inherited substratum or unconscious.
2. Attitudes are not temporary states of the organism but more or less enduring once they are formed. Because attitudes are formed, they are not immutable. However, once formed they are not subject to change from moment to moment with the ups and downs of homeostatic regulation of the body or with every change in stimulus conditions.
3. Attitudes stabilize the relationship between the person and objects. Thus every attitude is a subject-object relationship. Attitudes are not formed in thin air, nor are they self-generated. They are formed or learned in relation to identifiable referents, whether these factors are persons, objects, groups, values, institutions, social issues, or ideologies. . . .
4. The subject-object relationship has motivational-affective properties. When a person forms an attitude, he is no longer neutral toward the domain of objects in question. He is for some things and against others. Many attitudes are directed toward objects with social significance in the lives of the participants. These attitudes, and others not so heavily laden with social value, acquire emotional overtones and directive properties as parts of the developing self system, which itself becomes a highly charged anchor for experience and behavior. Therefore the linkage between self and environment is seldom neutral.
5. Attitude formation involves the formation of categories encompassing a small or large number of specific items. The referent of an attitude constitutes a set of objects that may range from one to a large number of objects. . . . attitude formation involves the stabilization of a set of categories varying from two to many. . . . The categories thus formed are used to differentiate among objects in a domain and to define the person's positive or negative relation to its various subsets.

6. Principles applicable to attitude formation in general are applicable to the formation of social attitudes. Attitudes directed toward social objects, values, social issues, groups and institutions are "social" attitudes. . . . The person forms attitudes relating himself to others in interpersonal relations, group relations, and intergroup relations; to his household furnishings and possessions (e.g., his car); cultural and class values, ethnic affiliations, and so on (Sherif & Sherif, 1969, pp. 334-335, emphasis in original).

Thus, for Sherif, attitudes are learned, internal processes, which are more or less lasting. They are ". . . the stands the individual upholds and cherishes about objects, issues, persons, groups, or institutions (Sherif, Sherif, & Nebergall, 1965, p. 4)." Further, attitudes are inferred from an individual's ". . . characteristic and consistent modes of behavior toward some class of objects, persons, events, and issues over a time span (Sherif, Sherif, & Nebergall, 1965, p. 6, emphasis in original)."

Sherif's conception of attitudes, like Thurstone's is an attempt to mediate psychophysical and psychosocial processes. Underlying both theories is the judgment process by which individuals rank related stimuli along a continuum which is termed a reference scale. Typically, in psychophysical experiments, individuals were presented a standard stimulus and asked to compare other related stimuli to this standard (method of pair comparisons). If the standard stimulus is omitted during the experiment (method of single stimuli) individuals are able to consistently judge the stimuli in relation to the non-existent standard stimulus. Thus, the standard stimulus for judgment has become internalized, and becomes an anchoring point for judgment along the reference scale. Psychophysical scales are reference scales which are formed in relation to a

series of objectively well graded physical stimuli. Psychosocial scales are defined as reference scales that are formed in relation to stimuli which are not objectively well graded. The major internalized anchor in the psychosocial scale would be the individual's "own position"--his stand toward the issue, object, etc. Related stimuli are judged in relation to this anchoring point.

Technique of measurement. In developing a scale for the measurement of attitudes, Sherif (Sherif, Sherif & Nebergall, 1965) lists three necessities required to avoid the point fallacy and socially desirable responses:

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 ego involvement with the issue.
3. Ways and means to insure 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).

To adequately specify the structure of an attitude, three concepts were developed: (1) latitude of acceptance, (2) latitude of rejection, and (3) latitude of noncommitment (Sherif, 1960; Sherif & Hovland, 1961; Sherif & Sherif, 1956; Sherif & Sherif, 1969; Sherif, Sherif & Nebergall, 1965). These are defined as follows:

Latitude of acceptance is the position on an issue (or toward an object) that is most acceptable, plus any other acceptable positions.

Latitude of rejection is the most objectionable position on the issue, plus other objectionable positions.

. . . concept latitude of noncommitment, defined as those positions not categorized as either acceptable or objectionable in some degree (Sherif, Sherif, & Nebergall, 1965, p. 24, emphasis in original).

The above regions (the terms latitude and region will be used interchangeably throughout this paper) may be found by use of a nine statement scale (Sherif, 1960, Sherif & Hovland, 1961; Sherif, Sherif, & Nebergall, 1965) which presents the subject with a set of ordered statements, ranging from extremely favorable to the issue, through neutral, to extremely unfavorable to the issue. Subjects are first asked to pick the one statement which is most acceptable to them from their point of view. This chosen statement is the individual's own position, and is considered to be the individual's main internal anchor. Next, subjects are asked to choose any other statements which are also acceptable to them. These other accepted statements, along with the most accepted statement constitute the region of acceptance. Subjects are then asked to choose the one statement which is most objectionable to them. This statement serves as the individual's anchor for judging statements that are contrary to his stand. Subjects then choose any other statements which are also objectionable to them. Together with the most objectionable position, this area constitutes the region of rejection. The region of rejection is also considered to be a measure of ego-involvement, i.e., a measure of how important the issue is to the subject. The more statements rejected, the more committed the individual is on the issue. Finally, those statements not chosen delineate the individual's region of noncommitment. Sherif notes the following relationships concerning own position and the three regions:

1. In proportion to the extremeness of an individual's stand on an issue, the latitude of rejection is greater than the latitude of acceptance and noncommitment approaches zero.
2. Proportional to the moderateness of the individual's position on an issue, the size of his latitudes of acceptance and rejection approaches equality.
3. As a result, the latitude of rejection of a person with an extreme stand is greater than that of a person taking a moderate position on the issue and his latitude of noncommitment is smaller (Sherif, Sherif, & Nebergall, 1965, p. 233).

However, the main determinant of the pattern of judgments does not appear to be extremeness of stand; rather, it is the individual's ego-involvement with the issue (Sherif, Sherif, & Nebergall, 1965, p. 233). Thus, from previous research (Sherif, Sherif, & Nebergall, 1965; Hovland, Harvey, & Sherif, 1957; Whittaker, 1964) Sherif postulates that the number of statements accepted by individuals do not, on the average, vary with extremity of position. Further, Sherif states: ". . . we postulate . . . that size of latitudes of rejection increases and size of latitudes of noncommitment decreases in proportion to the degree of involvement in the issue, regardless of extremeness of the most acceptable position (Sherif, Sherif & Nebergall, 1965, p. 234, emphasis in original)." In other words, the region of acceptance tends to remain about the same regardless of either own position or ego-involvement. While the region of rejection varies as a function of ego-involvement. Thus, size of the region of noncommitment would be a function of the size of the region of rejection. It might be noted at this point that, recent research has indicated that the region of acceptance does vary with extremity of position (Whittaker, 1965; La Fave & Sherif, 1968, Reich & Sherif, 1963; Bieri, Atkins, Briar, Leaman, Miller & Tripodi, 1966; Atkins, Deaux, & Bieri, 1967;

O'Leary & Hood, 1969). This research would indicate that the region of noncommitment would thus vary with either or both the region of acceptance and the region of rejection. Reciprocal relationships between the three regions has been shown by Chance (1968), Jones (1967, 1968), and Rudin (1968). However, no explanation for these findings has been hypothesized by Sherif.

Attitude Change and the Point Fallacy

Sherif's social judgment-involvement approach attempts to predict attitude change and the conditions under which it will take place. Inherent in this approach are the concepts of assimilation and contrast. Sherif specifies that an attitude will change in the direction of a communication only when that communication falls within the individual's region of acceptance. In other words, when confronted with a communication, an individual will judge it in relation to his major anchor--his own position. If it is judged to be within the individual's region of acceptance, the information will be assimilated. If the communication is judged to lie within the individual's region of rejection, it will be contrasted and thus rejected. A communication falling within the region of noncommitment will be assimilated or contrasted depending upon its proximity to the regions of acceptance and rejection. Thus, communications falling very close to the region of acceptance would probably be assimilated, while information close to the region of rejection would probably be rejected.

Further Sherif predicts that the more ego-involved an individual is with an issue, the less likely he will "change his attitude." Since highly committed individuals have larger regions of rejection than

moderately involved individuals, the chances of a discrepant communication falling within the region of rejection are greater for the highly involved person.

The question that arises, however, is what is attitude change? As noted in the discussion of Sherif's technique for scaling attitudes that the point fallacy is the erroneous assumption that an attitude can be assumed from a single point along a continuum of ordered statements, such as in the Thurstone, Likert, and Guttman techniques. For this reason, the regions of acceptance, rejection, and noncommitment were developed, along with their measurements. However, it is interesting to note that within the framework of Sherif's theory of attitude change (Sherif, Sherif, & Nebergall, 1965) and subsequent research on the topic based on Sherif's theory (see below) attitude change is still considered to be a change in the individual's own position--a point change.

Examples of research in this area will clarify the point. In studying the 1960 presidential election, Sherif (Sherif, Sherif, & Nebergall, 1965) presented Republican and Democratic subjects with either a strongly pro Republican communication or a strongly pro Democratic communication. The following were hypothesized:

First, we expect that the incidence of changes in the most acceptable position would be much lower on the part of persons taking strongly partisan stands than for those taking moderate stands. . . .

Our second prediction concerned the general direction of changes to be expected from the first to the second session. . . . the moderate Republicans and Democrats were expected to change more frequently to a more extreme stand, to an extent that would outweigh ordinary regression effects (pp. 174-176).

Sherif does, however, predict attitude change from patterns of the regions

of acceptance, rejection, and noncommitment. While laying the basis for analyzing attitude change in terms of ranges or regions, he apparently misses his own point--that attitudes are not simply a point along a continuum. He states:

However, conceptually, an attitude is inferred from specific consistency or characteristic mode of response to a class of stimuli, and attitude change is inferred from some alterations in this pattern of responses. By using the latitudes of acceptance, rejection, and noncommitment as attitude indicators, an opportunity not afforded by most measurement techniques is opened. A variety of changes can be studied, for example, in the size of the subject's latitude of acceptance, rejection, or noncommitment, as well as the location of these latitudes. . . (Sherif, Sherif & Nebergall, 1965, p. 178).

However, he then goes on to say:

. . . we consider the possibility that characteristic patterning of the latitudes of acceptance and rejection might be predictors of subsequent change in an individual's most acceptable stand. Persons who hold the same stand differ considerably in their choices of other acceptable positions and of objectionable positions (p. 179).

Thus, it can be seen that while the basis was laid for analyzing attitude change as a change in a region, it was also overlooked. Sherif preferred to relate the initial pattern of the regions to change in the most acceptable position.

In an attempt to relate the region of acceptance to attitude change, Atkins, et al. (1967) predicted the following:

Hypothesis 1: Regardless of the actual scalar position represented by the communication, attitude change in the direction of a persuasive communication will occur when the communication is perceived to lie within one's latitude of acceptance.

Hypothesis 2: . . . the evaluation of a persuasive communication will be subject to judgmental distortion. In order to facilitate the acceptance of a position at some distance from one's own, it is to be expected that the communication will be judged as "really not too far from

one's own," making a shift in own position a plausible outcome. Such judgmental distortion is to be found in the phenomenon of assimilation. Thus, it was hypothesized that attitude change would be associated with tendencies toward assimilative distortion of the persuasive communication (pp. 48-49, emphasis in original).

The key to the Atkins et al. study is in hypothesis two--the term own position. While attitude change was regarded as a function of the region of acceptance, attitude change proper was considered to be a change in own position. Accordingly, only own position was analyzed.

In an attempt to empirically check the theoretical propositions of Sherif's social judgment-involvement approach and Festinger's (1957) cognitive dissonance approach, Rand (1967) analyzed only the most acceptable position with respect to attitude change. However, this type of analysis was apparently done because Festinger used a Likert type instrument for attitude measurement, and no meaningful comparisons could be made between Sherif's measurement of latitudes and Festinger's single point measurement.

Also attempting to explain the theoretical differences in prediction of attitude change by Sherif and Festinger, Koslin, Stoops, and Loh (1967) varied credibility of communicator and discrepancy of communication to test their effects on attitude change. As in the Rand (1967) study, only a point measure was analyzed. Under the guise of having subjects participate in an experiment dealing with airline safety, Koslin, et al. had subjects adjust a rod inside a frame until it was reported vertical. It was unknown to the subjects that the experimenter was in actual control of the rod. Credibility was established visually by informing the subjects that airline pilots or novice pilots on the average

placed the rod in varying positions as being vertical. Subjects were classed by premeasures as being either stable or unstable i.e., stability was operationally defined as an altering opinion of verticality when there is no pressure to change. The following were predicted:

1. Opinion change will be a curvilinear function of communication discrepancy. . . .
2. Unstable subjects change more than stable subjects... .
3. Unstable subjects will evidence more change at larger discrepancies than will stable subjects. . . .
4. The greater the communicator prestige, the greater will be the change. . . . the liklihood of detecting a prestige effect is greater for unstable subjects, since their level of uncertainty about their own position is greater than that of stable subjects. . . .
5. Prestige can make a greater difference at levels of maximum uncertainty about own position. . . . (Koslin, Stoops, & Loh, 1967, p. 233).

It can readily be seen from the hypotheses of the Koslin et al. study that the interpretation given to Sherif's approach to attitude change is that attitude change consists of a change in own position.

Jones (1968) tested the effects of evaluation and dynamic communications on attitude change, using a nine point social judgment scale.

Jones hypothesized the following:

1. For subjects who are ego involved in the issue employed, little change would be expected in either own or most objectionable positions because of the manner in which they function as major anchors and because of the brevity of the experimental communications.
2. For subjects who are exposed to the experimental communications, one would expect the size of the latitude of non-commitment to decrease in comparison with a control sample or in comparison with these subjects acting as their own control.
3. . . . one might expect a larger change in the size of

latitude of rejection in response to the dynamism communication than in response to the evaluative communication.

4. . . . it appears probable that the evaluative communication would induce more gross change in the size of the latitude of acceptance than would the dynamism communication (p. 27).

While Jones predicted that change in attitudes would come from the latitudes, his first hypothesis dealt directly with own position. Here again, it can be seen that when considering attitude change, it is the own position that is first considered; change in the regions is secondary. Subsequent to Jones' (1968) study, Chance (1968) tested the effects of evaluative and dynamic nine point social judgment scales on measured attitude change. While Jones used a mixed scale and varied communication, Chance used a mixed communication and varied the attitude scales. Chance predicted the following:

1. The evaluative instrument should measure more effectively the changes toward the communications for most acceptable position and away from the communications for most objectionable positions than should the dynamic instrument.
2. . . . it is to be expected that either the dynamic or evaluative instrument will prove more effective in measuring any changes in latitudes resulting from a mixed communication (p. 22).

It can readily be seen that Chance's main hypothesis dealt with change in the major anchors; while his secondary hypothesis regarding latitudes was rather open-ended, and thus, secondary.

Sereno (1968) tested the effects of high communicator credibility, ego-involvement, and discrepancy of communication on perception of communicator and attitudes toward birth control pills. Subjects were selected by the "own categories" procedure (Sherif & Hovland, 1961; Sherif, Sherif, & Nebergall, 1965) such that both high and low ego-involved

subjects were represented in the sample. The own categories procedure is a card sort technique in which subjects sort into any number of piles a number of statements dealing with an issue. The first pile represents those statements which the subject perceives as being most unfavorable toward the issue; the last pile represents those statements perceived as being most favorable the issue. Ego-involvement can be found in either of two ways with the card sort. First, number of categories used is taken as a measure of involvement. The fewer categories used, the more involved the individual is with the issue. Second, subjects can be asked to select most acceptable and objectionable categories, and regions of acceptance, rejection, and noncommitment. In this case, the region of rejection is the measure of involvement. Sereno did not indicate which measurement of involvement he used. Attitudes toward birth control pills were measured by the own categories procedure, and the evaluative dimension of the issue was measured by the semantic differential (Osgood, Suci, & Tannenbaum, 1957). Subjects read a discrepant communication written by a high credibility source, then answered a post semantic differential questionnaire on the issue, and a semantic differential questionnaire for evaluating the author. Sereno hypothesized the following:

1. If attributed to a highly credible source, highly involved subjects should change their attitudes on the topic in the direction advocated less than lowly involved subjects.
2. If attributed to a highly credible source, highly involved subjects should lower their evaluations of the source more than lowly involved subjects (p. 477).

It is interesting to note that Sereno was attempting to test Sherif's notion of ego-involvement and source effects on attitude change; that subjects were selected by Sherifian procedures, but attitude and attitude

change was measured by the semantic differential. Also, a control group was not used due to the small sample initially selected ($N = 70$ with 6 omitted). However, the fact that Sherif's measuring techniques were omitted in favor of mean ratings on the semantic differential is significant in that a single point measurement appears to have been preferred.

In discussing the concept of latitude dimensions in attitude and attitude change, Diab (1967) points out most clearly the problem of the point fallacy in attitude measurement. In dealing with the issue of Arab unity, Diab notes the following:

Although the importance of both latitudes of acceptance and of rejection on an issue for understanding reaction to communication and attitude change were stressed, Sherif and Hovland (1961) actually used only the distance of the position advocated on the 'communication' from the limits of the subject's latitudes of acceptance in analyzing their data. . . . Analysis of the results obtained with the Arab unity issue. . . . shows that the subjects' reaction to a moderately unfavorable communication could not be explained adequately by considering only the distance of the communication from the limits of the subject's latitudes of acceptance. In brief, it was found that the subjects' latitudes of acceptance and rejection, rather than an estimate of the subjects' own stands alone, accounted much more adequately for the subjects' reactions to the 'communication' (p. 148, emphasis in original).

It is interesting to note that while being cognizant of the point fallacy in attitude measurement, Diab's emphasis in working with the Arab unity issue centered around patterns of acceptance and rejection with respect to communication evaluation. This is interpreted as viewing the construct attitude as being more than a point along a reference scale. However, Diab gives no insight as to whether he considers the construct attitude change as being more than a point along a continuum.

Finally, in an early study defining the regions of acceptance, rejection and noncommitment, Hovland, Harvey, and Sherif (1957) measured attitudes toward prohibition in a "dry" state, and tested the effects of

extreme and moderate one-sided communications on attitude change. The following were hypothesized:

1. Reactions to a communication will decrease in favorableness as the distance between S's own stand and the position advocated in the communication increases.
2. In evaluations by S of what position is advocated by a communication, the greater the distance between S's own stand and the position advocated in the communication, the greater the displacement away from S's position ("contrast effect"). When only a small discrepancy in position exists there will be a tendency for displacement toward S's stand ("assimilation effect").
3. With small distances between the position of the communication and that of the S, changes in S's opinion in the direction advocated by the communication will occur. With large distances between the stands taken by communication and by S, opinion changes in the direction advocated will be infrequent (p. 245, emphasis in original).

Interestingly enough, this early study reports attitude change as mean position of acceptable statements. Note that size of region of acceptance was not analyzed; rather, mean position of the region of acceptance was analyzed. Most acceptable position was not analyzed, but it can still be seen that attitude change was considered to be a point measure.

The Present Study

Each of the studies cited above has been related to the point fallacy. Attitude change is typically viewed as a change in the major anchor--the own or most acceptable position. The logic underlying this view is that incoming information is judged with respect to this major anchor, and placed in either the region of acceptance or the region of rejection. Looking more closely at the concepts of assimilation and contrast, it can be seen that when incoming information is judged to lie within the individual's region of acceptance, it is assimilated; and the

own position moves toward the position taken by the communication. Conversely, when the incoming information is judged within the individual's region of rejection, the information is rejected (contrast effect); and either no attitude change will take place or a "rebound effect" is possible (depending upon the extremity of the information). A rebound effect is a change in the individual's own position away from the position taken by the communication. Thus, to change an attitude, according to Sherif, you must change the most salient feature of the attitude--the major anchor used to judge all other related stimuli.

However, another approach to attitude change appears to have been overlooked. As previously noted, Sherif (Sherif & Sherif, 1969) defines an attitude as a ". . . set of categories for evaluating a domain of social stimuli . . . (p. 336-337)." The whole basis of Sherif's definition and theory is that an attitude cannot be represented by a single point measure; that an attitude is more than a point along a continuum. It is an area along a psychological continuum that an individual will accept, an area which he will not accept, and an area which he prefers to remain noncommittal about. In other words, an individual's attitude is the whole judgment continuum, the whole reference scale that is unique to him--not a single point along that continuum. If this is the case, then why is attitude change conceived as being a single point measure? Granted that when the own position is changed, the attitude has been changed. But what about the other aspects of an attitude--the most objectionable position, region of acceptance, region of rejection, and region of noncommitment. Would not a change in any one or all constitute a change in the whole; a change in the attitude? If an attitude is a set of categories,

then attitude change should be thought of as a change in judgment of the categories; not just the most salient feature.

Further, Sherif predicts that attitude change is a small step process, i.e., that the individual must be presented with mildly discrepant information in order to change his attitude (own position). Then it could be generalized that small increments of discrepancy, over time, would be needed to shift the own position from one end of the scale to the other, e.g., to reverse an individual's stand on an issue.

The whole basis of Sherif's theory i.e., a set of categories constituting an attitude, attitude change with mildly discrepant information and attitude change in small increments, lends itself to interpreting attitude change as a very subtle process. It could be interpreted not as a giant step of changing a major anchor, but as a small, subtle process in which the regions are changed. The present study is an attempt to test this notion of attitude change. More specifically, it is an attempt to (1) change an attitude without changing the most acceptable position, by (2) changing a latitude dimension. Since earlier studies, cited above, attempted to change own position by means of moderate and extreme discrepant communication, this study attempts to change the region of noncommitment by means of mixed-moderate and mixed-extreme two-sided communications. The following are hypothesized:

1. A mixed-moderate and a mixed-extreme two-sided communication will differentially effect the region of noncommitment.
2. Neither a mixed-moderate nor a mixed-extreme two-sided communication will cause a change in the most acceptable position.

CHAPTER II

METHOD

Overview

This chapter will present the general theoretical and experimental procedures used in the experiment. The general design of the study was a modified pretest-posttest control group design with two experimental conditions (Campbell & Stanley, 1963). The design of the experiment is shown in Table 1. Subjects were tested in the classroom situation with the pretest immediately followed by the independent variable, immediately followed by the posttest. The two experimental conditions were (1) an extreme-mixed communication, and (2) a moderate-mixed communication. The control condition consisted of having subjects remain silent (no communication) for the average time required to read the extreme and moderate communications.

Overall, 441 male and female subjects were tested. Of these 49 were rejected for one of three reasons: (1) failure to answer the attitude scales properly, (2) failure to indicate their sex, and (3) having participated in one of the two pilot studies. The remaining 392 subjects consisted of 196 males and 196 females. Subjects were 213 freshmen, 55 sophomores, 15 juniors, 6 seniors, and 2 part time or unclassified students. The median age of the subjects was 19 years. All subjects were

TABLE 1
Experimental Design

Pretest	Extreme-Mixed Communication	Posttest
Pretest	Moderate-Mixed Communication	Posttest
Pretest	Control (No Communication)	Posttest

registered in one of two Introductory History courses, which are required of all students at Midwestern University, Wichita Falls, Texas. History classes were used for the following reasons: (1) an enrollment large enough to insure an adequate sample, (2) a diminished probability of a subject being in more than one class, and (3) a large enrollment to assure a two day testing period. Of the 392 subjects, 149 received experimental condition 1 (extreme communication), 154 received experimental condition 2 (moderate communication), and 89 served as control subjects.

Pre-experimental Procedures

Selection of the issue. In January, 1969, a pilot study was conducted in an attempt to aid in the selection of an issue to be used in the main experiment. The selection was based upon three criteria: (1) the issue must be relevant to a college population, (2) the issue must be nationally controversial, and (3) it must yield a distribution of committed (both pro and anti the issue) and uncommitted subjects. Four issues were selected which were thought to meet requirements one and two, and were tested for the third assumption. These issues were: (1) gun control

legislation, (2) censorship of movies, (3) capital punishment, and (4) the Federal Antipoverty Program. Of these issues, two had social judgment scales previously constructed and tested, while the Federal Antipoverty scale and capital punishment scale were designed at the time of the pilot study in accordance with the criteria established by Sherif (Sherif, et al., 1965). Two forms of the antipoverty scale were developed with the only difference being in the fifth statement. In Form I the middle statement read:

From the point of view of our country's interests, it is hard to decide whether or not we should continue the Federal Anti-Poverty Program (Office of Economic Opportunity).

In Form II the middle statement read:

From the point of view of our country's interests, it is hard to decide whether or not we should expand or reduce the Federal Antipoverty Program (Office of Economic Opportunity).

Eighty-two male and female subjects were tested from two Introductory Psychology classes. Every other subject was given a booklet with the four social judgment scales, each of which contained either Form I or Form II of the antipoverty scale. Subjects were instructed that the purpose of the study was to survey student feelings toward various issues. They were further instructed that the study was to be anonymous, and that anyone who felt that their participation in the study was an invasion of their privacy should feel free not to participate.

Subjects were asked to look at the first page, while the following instructions were read:

On the first page you see nine statements dealing with the issue of gun control. Please read each of those statements carefully at this time.

Put the letters MA (most acceptable) next to the ONE state-

ment which comes closest to your stand on this issue.

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

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.

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

Subjects were told that they must have only one MA and one MO on their papers, and that they could have any number of A's and O's. The same instructions were repeated for the other issues. All issues were presented in a fixed order of gun control, censorship, capital punishment, and antipoverty (see Appendix A).

Distributions of the most acceptable position (see Figures 1-6) indicated that two issues were acceptable for the main experiment--capital punishment and gun control legislation. Although capital punishment had the better distribution in terms of the third criterion, gun control was selected due to the ongoing trials of James Earl Ray and Sirhan B. Sirhan. It was felt that if either Ray or Sirhan were to receive the death penalty during the experiment, the results might be confounded with the trials. While this might also have been true for the issue of gun control, it was felt that the issue of gun control was broader than the issue of capital punishment, thus reducing the risk of confounding the results.

Constructing the communications. Once the issue had been decided, the next step was to construct the communications. Since prior experimentation (Atkins, et al., 1967; Rand, 1967; Koslin, et al., 1967; Jones,

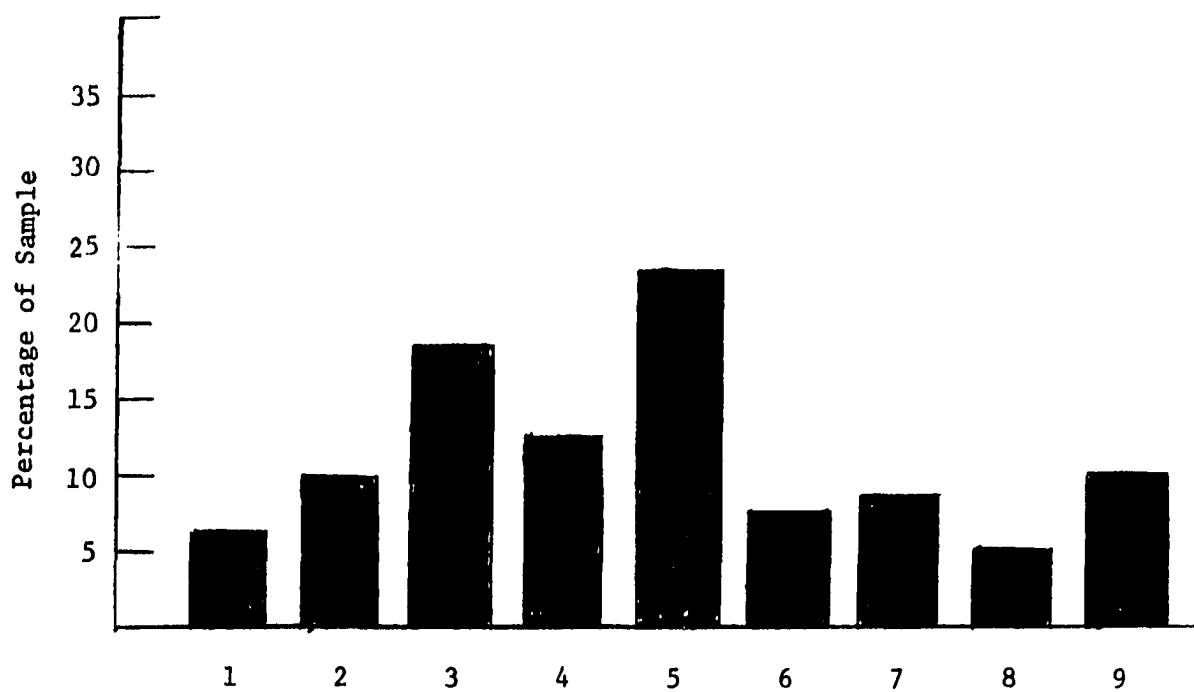


Fig. 1. Most Acceptable Position on Gun Control Legislation
(Pilot 1)

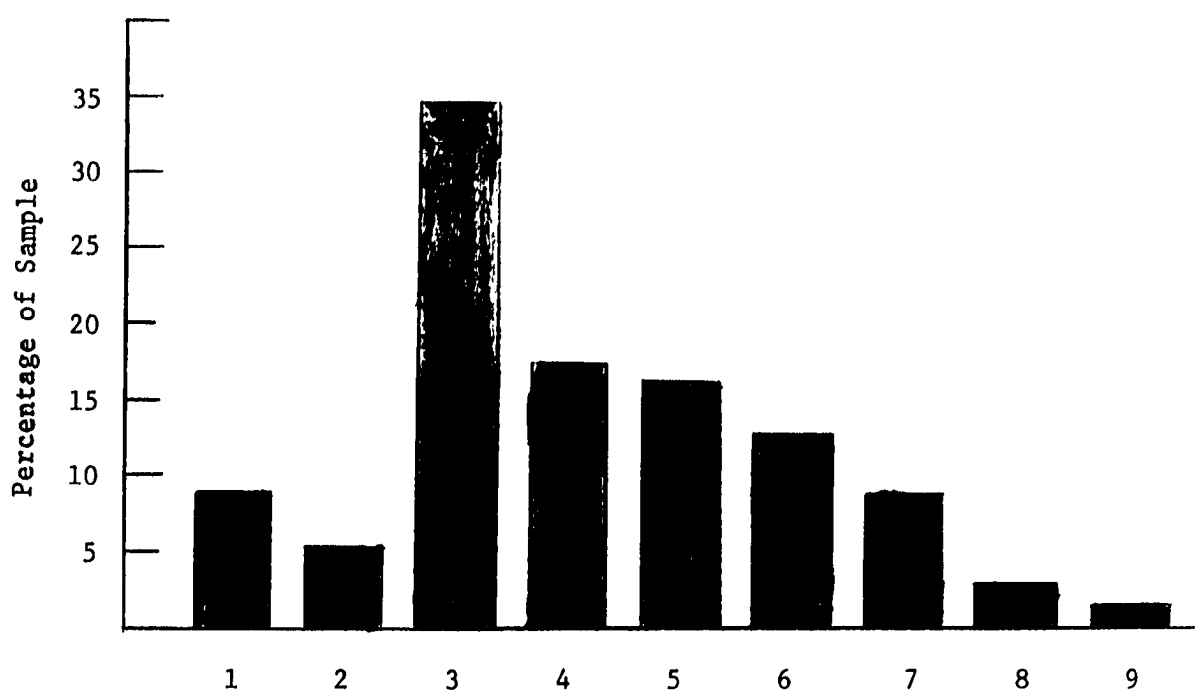


Fig. 2. Most Acceptable Position on Censorship of Movies (Pilot 1)

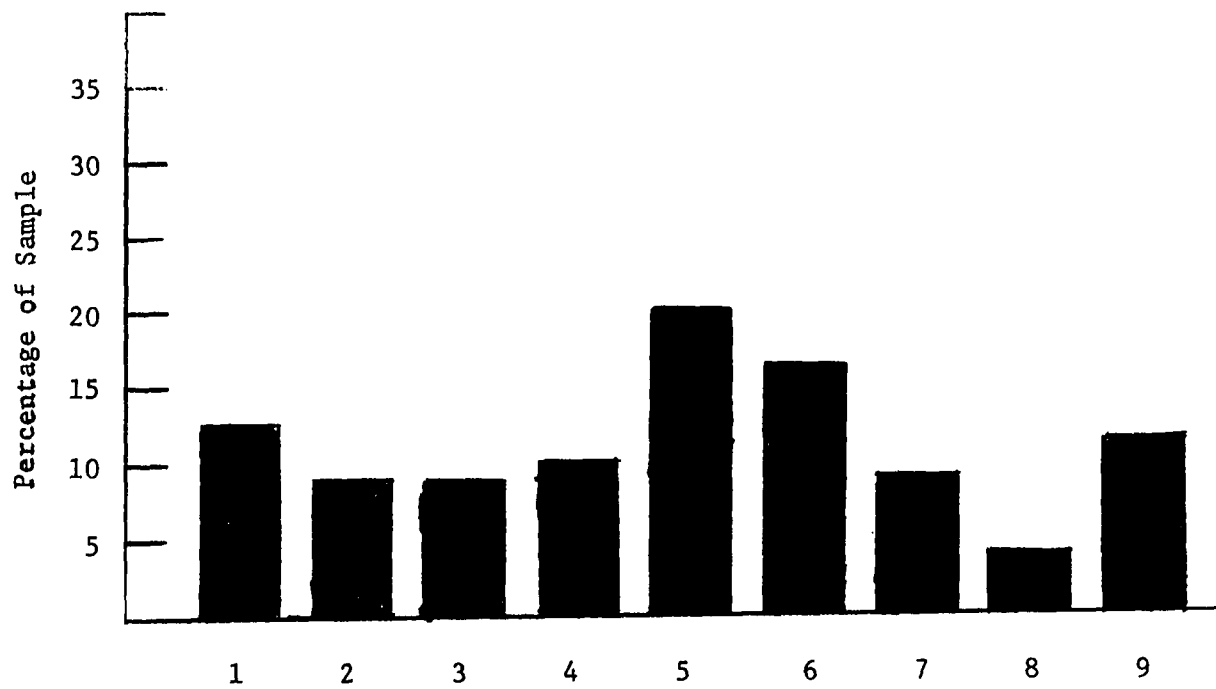


Fig. 3. Most Acceptable Position on Capital Punishment (Pilot 1)

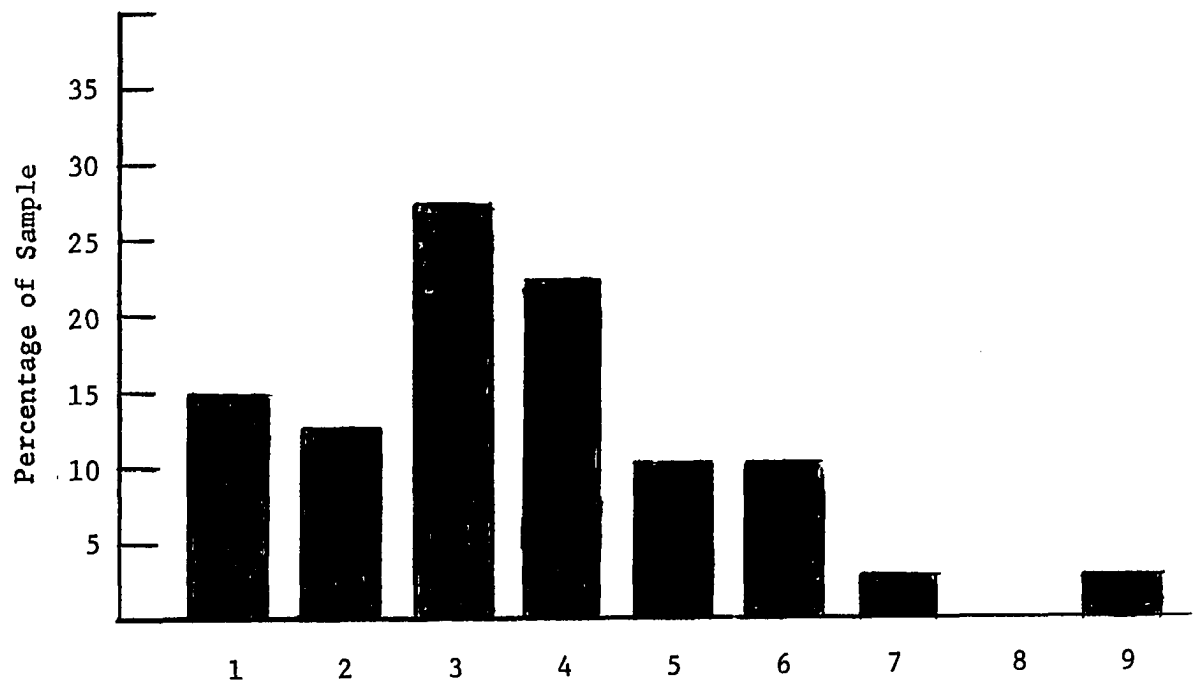


Fig. 4. Most Acceptable Position on Federal Antipoverty Program--
Form I (Pilot 1)

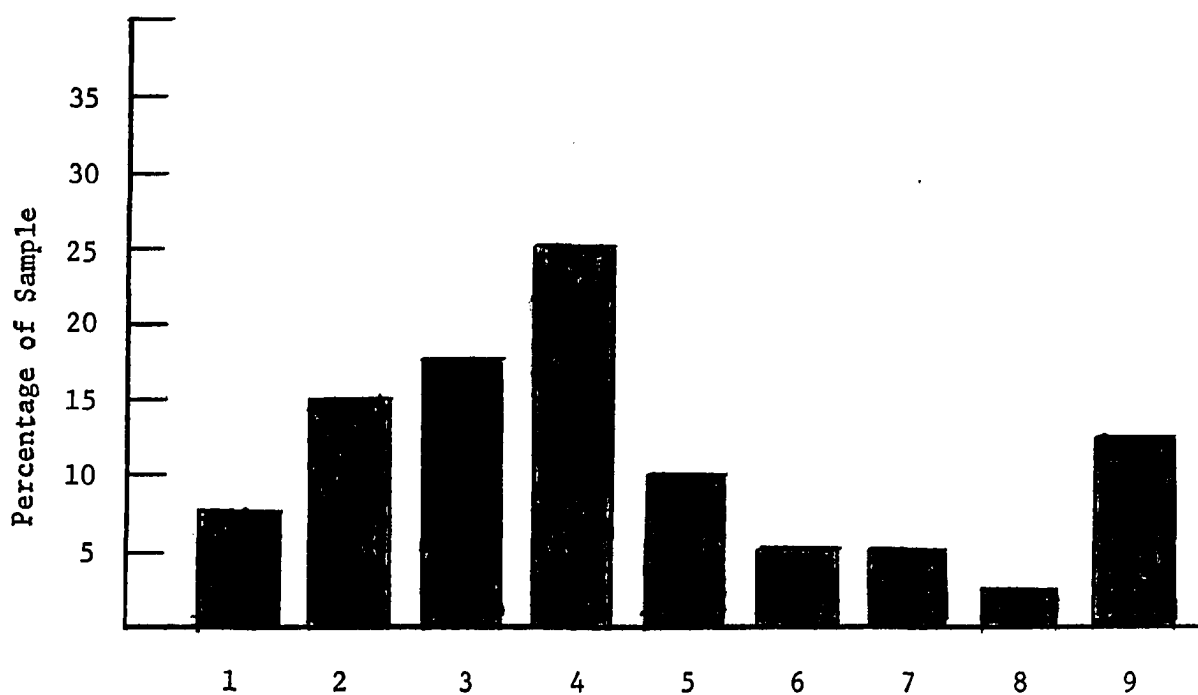


Fig. 5. Most Acceptable Position on Federal Antipoverty Program--
Form II (Pilot 1)

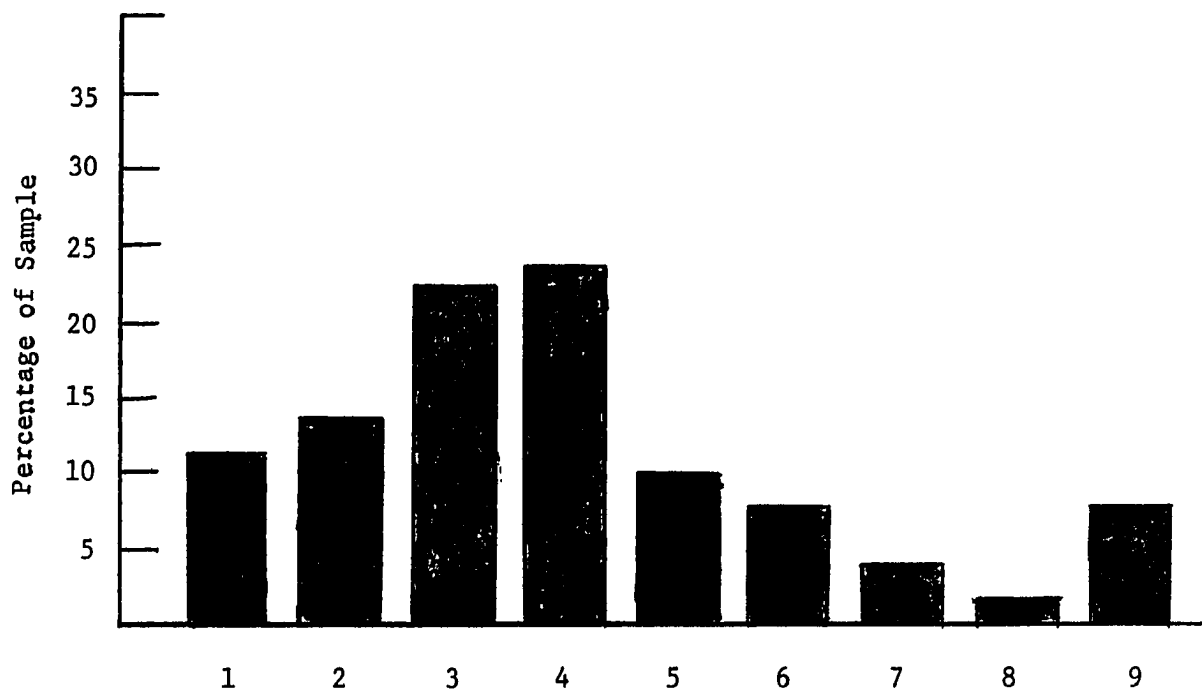


Fig. 6. Most Acceptable Position on Federal Antipoverty Program--
Combined (Pilot 1)

1968; Rudin, 1968; Chance, 1968) had dealt with varying either extreme or moderate (or both) one sided communications, both extreme-mixed and moderate-mixed communications were used in the present study to test the most widely used dimension of attitude change (extreme and moderate communications) with mixed communications. Both communications contained essentially the same arguments for and against gun control legislation. The main difference between the two was that the extreme-mixed communication was designed with more socially loaded adjective phrases than was the moderate-mixed communication. The first words of each will illustrate the difference. The extreme-mixed began: "Ever since the wanton slaying . . . ," while the moderate-mixed communication began: "Ever since the assassination" The complete text of these articles is reproduced in Appendix B.

Information for the articles came from related magazine articles, and from a communication previously used in a psychological experiment (Chance, 1968). All information was authentic and printed as being written by the experimenter. Information for the extreme-mixed communication was designed to fall at points one and nine of the social judgment scale; while information for the moderate communication was designed to fall at points four and six.

Testing the communications. After constructing the communications, a second pilot study was conducted to see if the communications were being perceived as equally mixed with pro and anti arguments. Sixty-two male and female subjects were tested from one advanced psychology and one advanced sociology class. Each subject was given a booklet containing either the extreme or moderate communication and a nine point social

judgment questionnaire. The booklets were passed out in a staggered order such that no two subjects sitting next to each other had the same communication. Subjects were instructed that the study was to be anonymous, and that anyone who felt that participation was an invasion of their privacy should feel free not to take part. Subjects were then asked to read the article. After reading the article, subjects were read the following instructions:

On the last page of the booklet, you see nine statements dealing with the issue of gun control. Please read each of these statements carefully.

Think about the article you read and circle the letter in front of the one statement that best represents the views expressed in the article.

From the data in Tables 2 and 3, it can be seen that the mean choice for the extreme-mixed communication was 4.39; and for the moderate-mixed communication, the mean position was 4.87. At this point the communications were altered for two reasons: (1) the extreme-mixed communication was being perceived as more pro gun control than equally pro and anti gun control, and (2) the moderate-mixed communication was one-half page (389 words) shorter than the extreme-mixed communication. Thus, the anti gun control arguments in the extreme-mixed communication were strengthened, and a summary statement was added to the moderate-mixed communication to make it approximately the same length as the extreme-mixed communication.

To improve credibility, the author of the communications was changed from the experimenter to Dr. Richard A. Simms, a leading political scientist from the Center for Social Research, Washington, D.C. Both the author and the institution were fictitious. A complete text of the

amended communications can be found in Appendix C.

TABLE 2

Placement of Extreme Communication on a
Nine Point Social Judgment Scale
Pilot 2

	Position of Extreme Communication								
	1	2	3	4	5	6	7	8	9
Frequency	0	3	6	5	12	3	2	0	0
N = 31									
M = 4.39									

TABLE 3

Placement of Moderate Communication on a
Nine Point Social Judgment Scale
Pilot 2

	Position of Moderate Communication								
	1	2	3	4	5	6	7	8	9
Frequency	0	2	3	6	11	5	3	1	0
N = 31									
M = 4.87									

Administration of the Experiment

To repeat, subjects were tested in the classroom situation during regularly scheduled class meetings. To keep the experiment to a two-day maximum (to help insure that subjects would be uninformed), three

experimenters were used, all of whom were male members of the Department of Psychology and Sociology. Each experimenter tested five classes, one of which served as a control group. Classes were assigned each experimenter so that each would test about the same number of subjects and each would test classes spread out over the two experimental days. A breakdown of classes, enrollment figures, and actual number of subjects tested can be seen in Table 4. Each experimenter read from a set of prepared instructions. Since the control group received no communication, they were tested separately from the experimental groups. For the experimental conditions, both conditions one and two were carried out in the same classes, such that each subject received one of the two communications.

TABLE 4
Schedule of Tested Classes.

Day	Time	Experimenter	Number Registered	Number Tested
Wednesday	8:00 am	Traub	82	36
	8:00 am	Rudin	39	30
	9:00 am	Colee *	40	25
	10:00 am	Traub	41	31
	10:00 am	Rudin *	42	41
	11:00 am	Rudin	37	31
	12:00 pm	Colee	56	46
	12:00 pm	Traub	36	24
	3:00 pm	Colee	20	10
	8:00 am	Colee	35	27
Thursday	9:30 am	Rudin	38	27
	9:30 am	Traub *	42	34
	11:00 am	Rudin	40	27
	12:30 pm	Colee	44	37
	2:00 pm	Traub	20	15
		Total	612	441
(*) indicates control group				

Administration of the experimental conditions. Class instructors were asked in advance not to mention to their students that an experiment was going to take place. Further, they were asked to allow the experimenter to make his own introduction. The experimenter introduced himself as a member of the Department of Psychology and Sociology, and then asked for the subjects' cooperation in a research project that the department was conducting. At this time the test booklets were passed out face down, with the explanation that the purpose of the experiment would be explained as soon as everyone had a booklet. After the booklets were passed out, subjects were told, with emphasis, that the study was to be completely anonymous, and not to put their names on the test booklets. They were then informed that the study was voluntary, and anyone who felt that participation in the study was an invasion of their privacy should feel free not to participate. After these instructions, the purpose of the study was explained as follows.

As you know, psychologists and sociologists are interested in how people feel about different issues. The purpose of this study is to survey student feeling towards gun control legislation. After you answer a questionnaire, I am going to ask you to read an article by a leading political scientist, Dr. Richard A. Simms, which may give you some information about gun control which you did not know before. After you read the article, I am going to ask you to fill out another questionnaire to see if you still feel the same. Do not read ahead.

After this explanation, subjects were asked to look at the first page of the booklet. While the test booklet contained the pre-measures, communication, and post-measures, these components are shown in separate appendixes for descriptive purposes. The pre-measures can be found in Appendix D. Subjects were instructed to fill in the information requested on the

first page--the Subject Data Sheet. The next four pages of the test booklet consisted of the social judgment scale for gun control legislation. Subjects were read the following instructions for the attitude scale:

On the page before you, you see nine statements dealing with the issue of gun control legislation. Please read each of those statements carefully at this time.

Now that you have carefully read all the statements, underline that ONE statement that comes closest to your stand on this issue.

On the next page, you see nine statements which are the same as those on the preceding page. Please go through the statements and circle the letter in front of any other statement or statements which are also acceptable to you.

On the next page, are nine more statements which are the same as those on the preceding pages. Reading through the statements again, cross out the ONE statement which is most objectionable to you from your point of view.

On the next page are nine more statements. Please go through the statements and mark an "X" through the letter in front of any other statement or statements that are also objectionable to you.

After completing the social judgment scale, subjects were instructed to read the article by Dr. Simms (see Appendix C), which took approximately eight minutes. Following the articles, subjects answered the post social judgment questionnaires which were identical to the pretest measures. The same instructions that were read for the pretest were read for the posttest.

Following the attitude scales, subjects rated the communication as to where they perceived it on the nine point social judgment continuum (see Appendix E).

They were read the following instructions:

On the following page you will find nine statements which are the same as those you have read before. Think about the article by Dr. Simms that you have just read, and circle the letter in front of the ONE statement that best represents the view expressed by the article written by Dr. Simms.

Subjects next rated the article and the author on four nine point rating scales which pertained to the intelligence of the author, expertness of the author, bias of the article, and factual basis of the article. Subjects were instructed as follows:

Turning the page you will find four questions pertaining to the article and to Dr. Simms. Put a circle around the number which you think best categorizes Dr. Simms or the article. The first question asks: "How intelligent is the author?" Circle the number on the continuum from "not at all intelligent" to "extremely intelligent" which you feel categorizes Dr. Simms. Continue on for the other questions.

On the last page of the test booklet, subjects answered two subjective questions to ascertain what each subject thought the purpose of the study to be, and if they felt that they had been tricked in any way.

After answering the purpose and trickery questions, subjects were instructed to turn back to the first page (the Subject Data Sheet) and to indicate with a "yes" or a "no" in the bottom right hand corner if they had ever seen any of the material used in the test booklet in any of their psychology or sociology classes. The purpose of this was to omit any subjects who had participated in either of the two pilot studies.

At the conclusion of the experiment, subjects were thanked for their participation in the research project.

Administration of the control condition. Each experimenter tested one class of control subjects. The experimental procedure for the control condition was the same as that for the experimental conditions except for the following changes.

Since the control group received no communication, the explained purpose was altered to the following:

As you know, psychologists and sociologists are interested in how people feel about different issues. The purpose of this study is to survey student feeling toward gun control legislation. After you answer a questionnaire, I am going to ask you to remain silent for a short period of time to give you time for further thought on the issue. Then I am going to ask you to answer another questionnaire to see if you still feel the same.

It is realized that the above explicative purpose and the purpose for the experimental groups is likely to produce some change in both the experimental and control groups due to the demand characteristics of the situation (Orne, 1962).

The order of presentation of the materials in the test booklets was the same for both experimental and control conditions. Thus, the Subject Data Sheet and the social judgment scale were presented first to the control subjects (Appendix C). After the social judgment scale, a blank sheet of paper was inserted to separate the pretest from the posttest. At this point, where the experimental subjects were instructed to read the article by Dr. Simms, the control group subjects were instructed as follows: "Now, please turn the page to the blank page in your booklets. Please remain silent and think about the issue of gun control." Eight minutes were allowed for thought on the issue (the approximate reading time of the actual articles), and then the post attitude measures were taken (Appendix C). Since no communication was read, the questionnaire asking subjects to rate the communication on the nine point scale and the rating scales for author and article were omitted. The remainder of the control session followed the procedure outlined for the experimental sessions (Appendix E).

CHAPTER III

RESULTS

After completion of the experimental conditions, subjects' responses were coded and punched on IBM cards for analysis. Each subject was assigned a subject number for identification purposes. The coding key for the demographic data, taken from the first page of each test booklet (see Appendix D), can be found in Appendix F on the page entitled "Key to Original Observations." Pre and post social judgment questionnaires were scored as follows: (1) most acceptable position was scored by considering the nine statements (ranging from A to I as a nine point continuum, and assigning the numbers one through nine to the statements in ascending order. As noted in Chapter II, statement one would be the statement most pro the issue of gun control, statement number five was the neutral statement, and statement number nine was the statement most against gun control legislation. Thus, a subject who chose statement B as most acceptable was given a score of two. (2) Region of acceptance was coded by counting the number of acceptances (including the most acceptable position). Regions refer to the size of areas, not to mean position of an area. An individual who accepted statements A, C, and D, and whose most acceptable position was at statement B, would have a region of acceptance of four. (3) Most objectionable position was scored

similarly to most acceptable position, and (4) region of rejection was scored similarly to region of acceptance. (5) Region of noncommitment was scored by totaling the regions of acceptance and rejection, and subtracting from nine (the total number of statements). Regions, then, denote the size of areas; while positions (most acceptable and most objectionable) denote points along a continuum or reference scale.

Questions dealing with intelligence of the author, expertness of the author, bias of the article, and factual basis of the article were scored by assigning the number circled by subjects along the continuum.

The last two questions, dealing with perceived purpose of the experiment and perceived trickery, were scored dichotomously. For the first question, a score value of one was assigned those responses which were judged by the experimenter as being the same or similar to the purpose explained in the instructions (see Chapter II). A score of two was assigned those responses which were judged as being other than explained. For the second question, a score of one was assigned those responses in which no trickery was perceived, and a score value of two was assigned perceived trickery responses. While the instructions called for qualifying a "yes" response to the trickery question (thought there was trickery), a score of two was assigned even if no qualifying statement appeared, as the subject might think that he was being tricked but did not know in what manner. For both questions, those responses which could not be read, were ambiguous, or which were not considered "serious" responses were dropped from the analysis (purpose-- $N = 20$; trickery-- $N = 12$). For example, one subject responded as follows to the trickery question: "Some. The guy that gave the survey doesn't have an honest face. Watch out for

him, he's probably a high ranking mafia member."

Pretest Measures

The first step in the analysis of the data was to determine the pattern of responses from the social judgment scale on the pretest. Analysis of these relationships are discussed on this and the following pages.

Correlations (Walker & Lev, 1953) were calculated across subjects between most acceptable position (MA), region of acceptance (RA), most objectionable position (MO), region of rejection (RR), and region of noncommitment (RNC). In Table 5, it can be seen that for the issue of gun control legislation, the most acceptable position is significantly negatively correlated with most objectionable position ($r = -.701$, $p < .001$), with the region of rejection ($r = +.124$, $p < .014$), and with the region of noncommitment ($r = -.098$, $p < .052$). It should be pointed out that in total, 253 coefficients of correlation were computed for various analyses in this study (including demographic variables, etc.) with $N \leq 392$. Thus, while a correlation coefficient of approximately .13 is statistically significant at the .001 level, the practical significance of a correlation coefficient this small is questionable. For this reason, only those correlation coefficients which reached or exceeded .40 are reported here (with the exception of those in Table 5). Note that since $N \leq 392$, critical regions for any given significance level may vary slightly due to the value of N in each correlation analysis. A complete listing of all correlations is reproduced in Appendix G. The region of acceptance was significantly negatively correlated with the region of noncommitment ($r = -.551$, $p < .001$), while the region of rejection and

TABLE 5

Intercorrelation Matrix Between Most Acceptable Position (MA), Region of Acceptance (RA), Most Objectionable Position (MO), Region of Rejection (RR), and Region of Noncommitment (RNC)

	RA	MO	RR	RNC
MA	- .010	- .701***	+ .124**	- .098*
RA		+ .010	+ .043	- .551***
MO			- .065	+ .049
RR				- .858***

* $p < .052$

** $p < .014$

*** $p < .001$

region of noncommitment were significantly correlated ($r = -.858$, $p < .001$). These correlations indicate that (1) the more extreme the initial position (MA), the more extreme the most objectionable position, i.e., they are reciprocally related; (2) the larger the regions of acceptance or rejection, the smaller the region of noncommitment; and (3) regions of acceptance and rejection are not related to each other except through region of noncommitment.

In addition to the correlation matrix, analyses of variance (Dahlke, 1967; Winer, 1962) were performed to test the equality of response measures (most acceptable position, most objectionable position, and regions of acceptance, rejection, and noncommitment) across subjects along the sex, experimenter, and communication dimensions. These analyses can be

seen in Tables 6 through 10. Inspection of Table 6 indicates a significant sex main effect for the most acceptable position ($F = 27.869$, $p < .005$). Graphing the main effect (see Figure 7) indicates that females tend to have more pro own positions than do males. In addition, there was a significant three way interaction between sex, experimenter, and communication ($F = 2.562$, $p < .05$), which is not interpretable.

TABLE 6
Analysis of Variance on Most Acceptable Position Scores
for the Pretest

Source	MS	df	F	p
Sex (S)	130.362	1	27.869	< .005
Experimenter (E)	6.239	2	1.334	NS
Communication (C)	8.233	2	1.760	NS
S x E	12.916	2	2.761	NS
S x C	6.140	2	1.313	NS
E x C	3.621	4	0.774	NS
S x E x C	11.986	4	2.562	< .05
Error	4.678	374		

For the region of acceptance, it can be seen from Table 7 that there is a significant sex main effect ($F = 4.848$, $p < .05$), and a significant sex by experimenter interaction ($F = 4.111$, $p < .05$). Graphing the main effect (see Figure 8) shows that females tend to have larger regions of acceptance than do males. However, the graph of the interaction (see Figure 9) indicates that the significance is due to the Experimenter 2 cell where there is a large drop in the size of the region of acceptance for males.

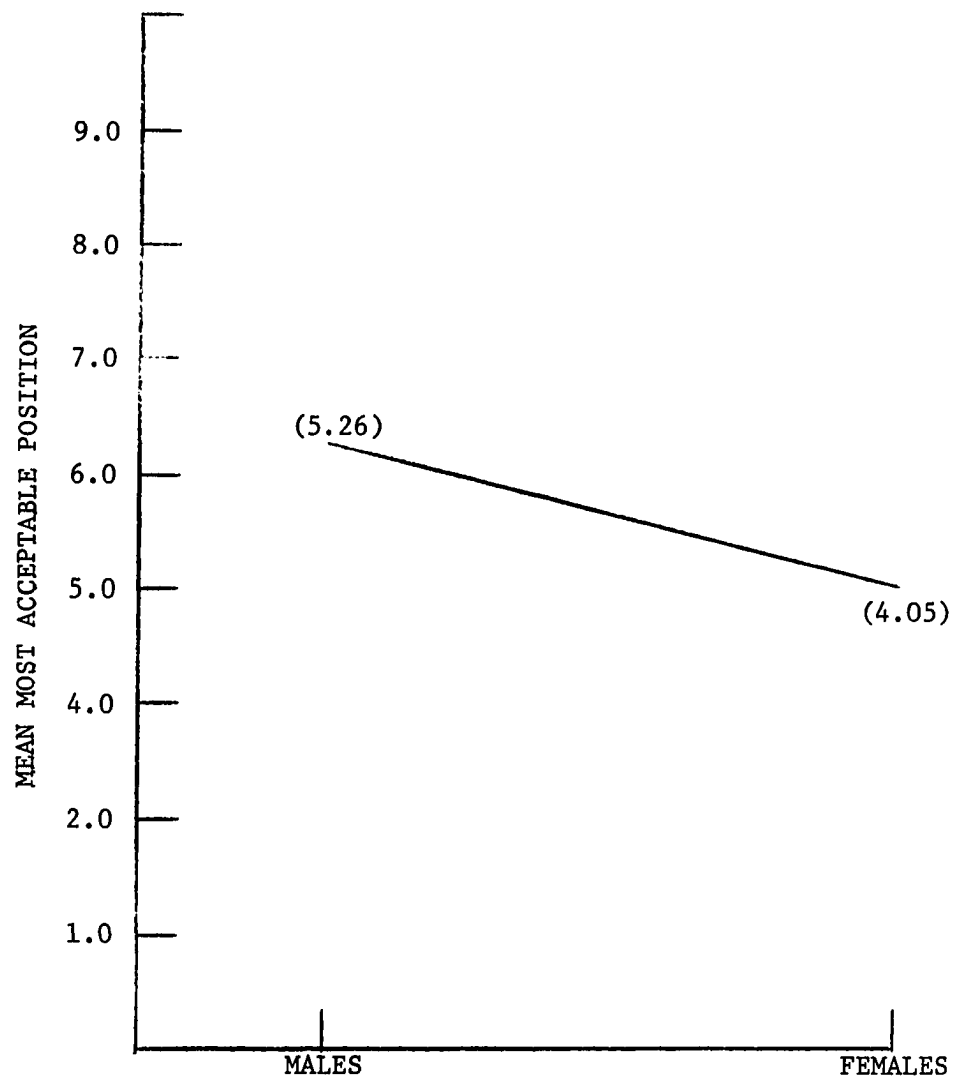


Fig. 7. Sex Main Effect for Most Acceptable Position

TABLE 7

Analysis of Variance on Region of Acceptance Scores
for the Pretest

Source	MS	df	F	p
Sex (S)	2.999	1	4.848	< .05
Experimenter (E)	1.559	2	2.520	NS
Communication (C)	0.484	2	0.782	NS
S x E	2.543	2	4.111	< .05
S x C	0.249	2	0.403	NS
E x C	1.297	4	2.097	NS
S x E x C	0.344	4	0.556	NS
Error	0.618	374		

A significant sex main effect for the most objectionable position can be seen in Table 8 ($F = 21.300$, $p < .005$). Graphing the main effect (see Figure 10) indicates that females tend to have more anti most objectionable positions, while males tend to have more pro most objectionable positions.

TABLE 8

Analysis of Variance on Most Objectionable Position Scores
for the Pretest

Source	MS	df	F	p
Sex (S)	303.183	1	21.300	< .005
Experimenter (E)	5.550	2	0.390	NS
Communication (C)	8.489	2	0.596	NS
S x E	2.180	2	0.153	NS
S x C	6.680	2	0.469	NS
E x C	12.362	4	0.868	NS
S x E x C	8.813	4	0.619	NS
Error	14.234	374		

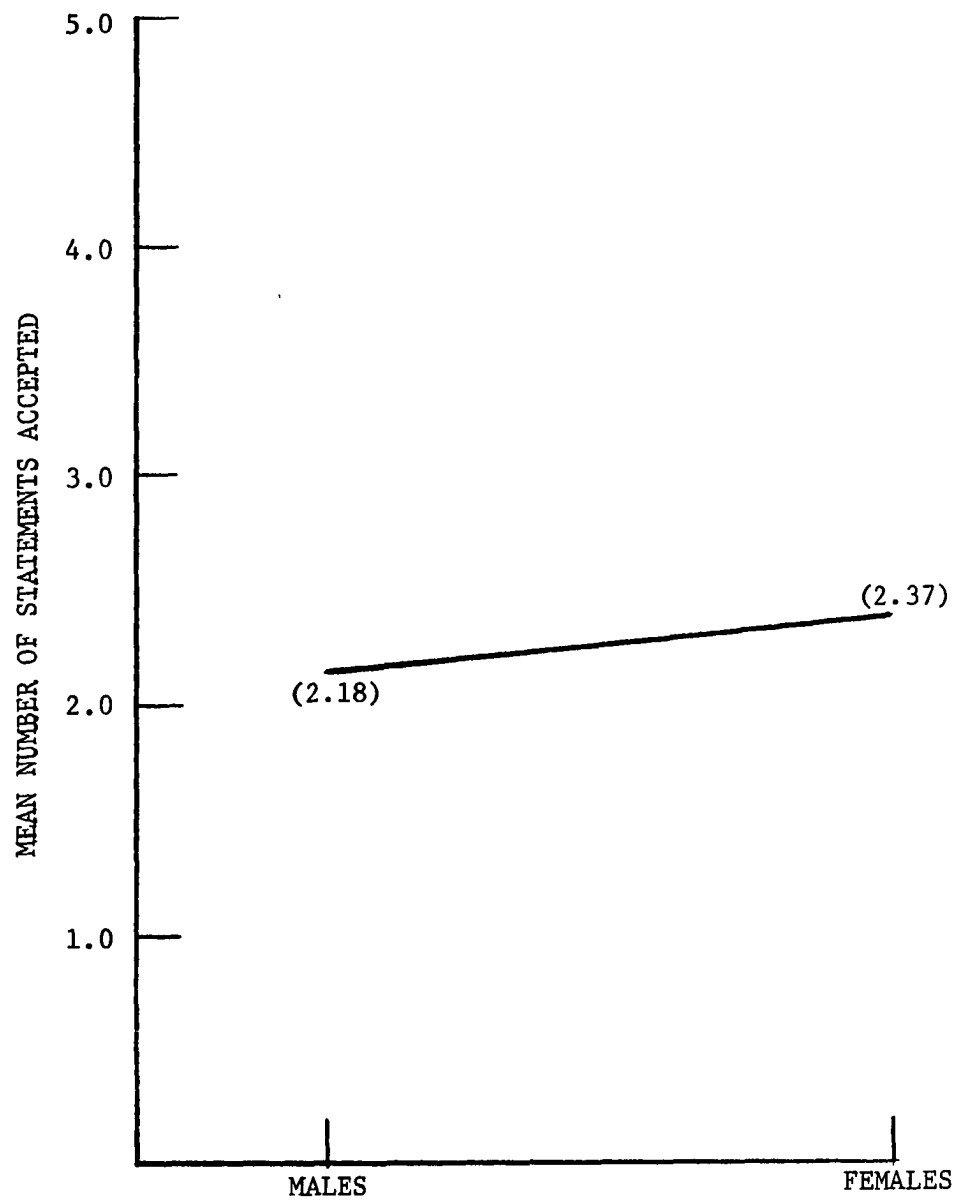


Fig. 8. Sex Main Effect for Region of Acceptance

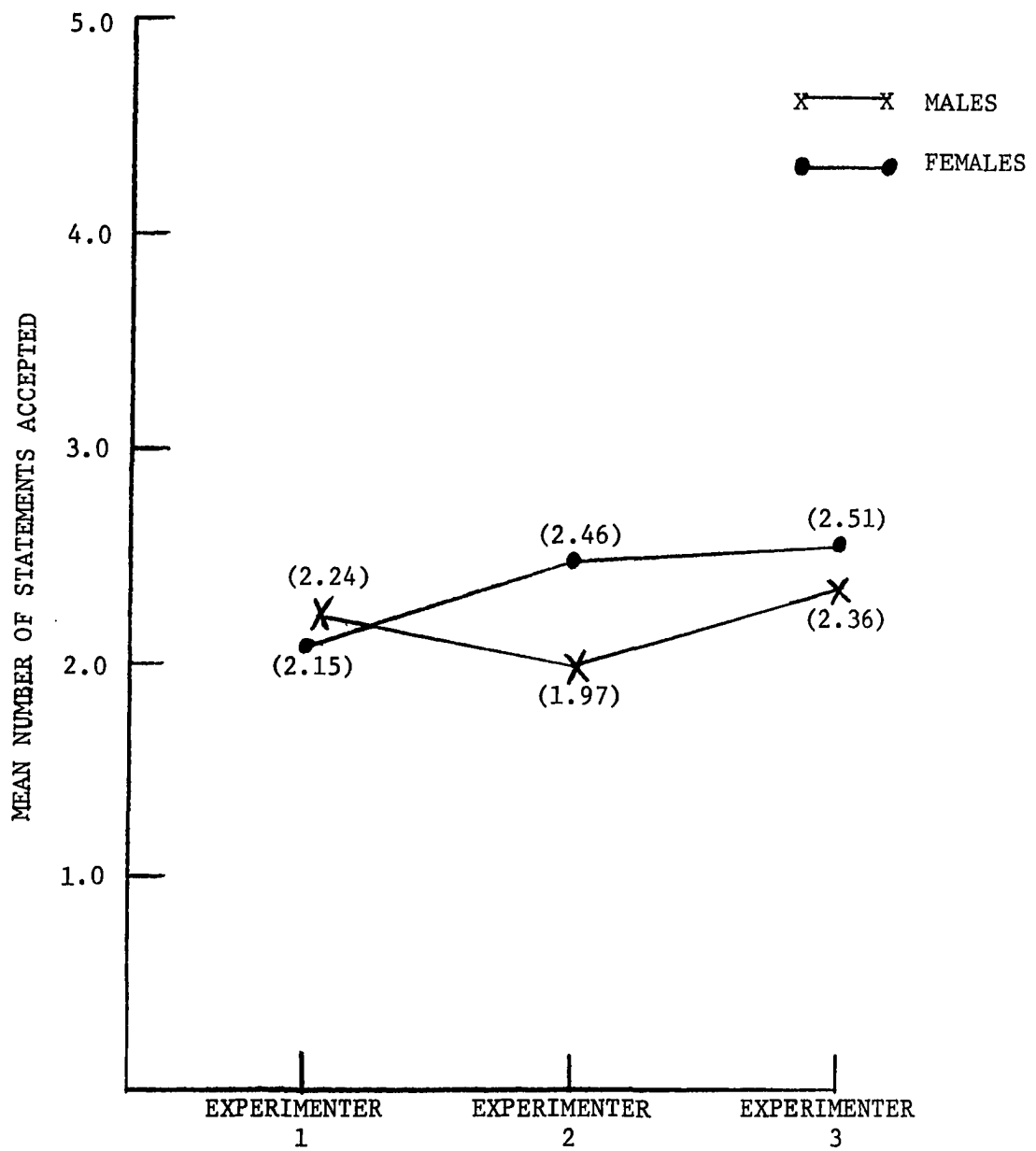


Fig. 9. Interaction of Sex and Experimenter for Region of Acceptance

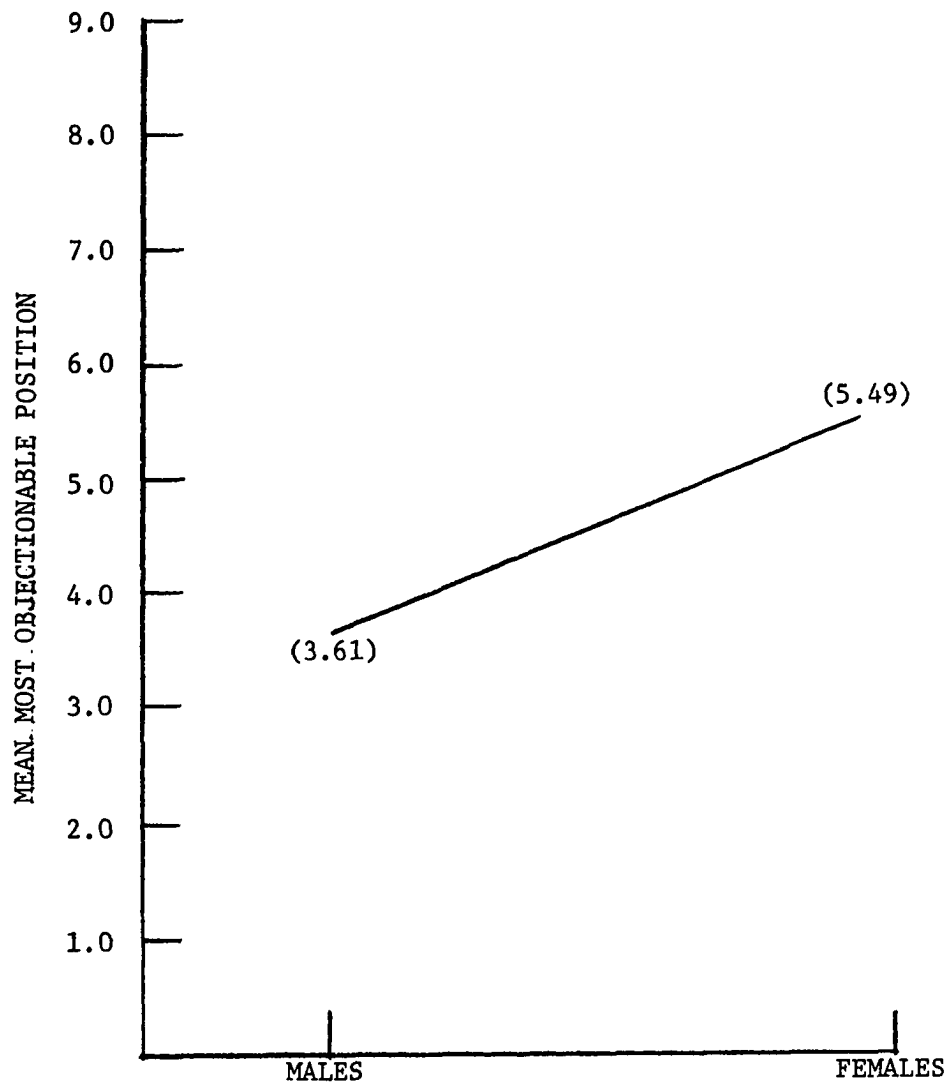


Fig. 10. Sex Main Effect for Most Objectionable Position

As can be seen from Tables 9 and 10, there were no significant differences for the regions of rejection and noncommitment.

TABLE 9
Analysis of Variance on Region of Rejection Scores
for the Pretest

Source	MS	df	F	p
Sex (S)	3.914	1	2.280	NS
Experimenter (E)	3.100	2	1.805	NS
Communication (C)	0.440	2	0.256	NS
S x E	0.990	2	0.577	NS
S x C	0.234	2	0.014	NS
E x C	0.685	4	0.399	NS
S x E x C	1.755	4	1.022	NS
Error	1.717	374		

TABLE 10
Analysis of Variance on Region of Noncommitment Scores
for the Pretest

Source	MS	df	F	p
Sex (S)	0.061	1	0.024	NS
Experimenter (E)	0.802	2	0.324	NS
Communication (C)	0.996	2	0.402	NS
S x E	6.696	2	2.702	NS
S x C	0.254	2	0.102	NS
E x C	0.706	4	0.285	NS
S x E x C	1.906	4	0.769	NS
Error	2.478	374		

Attitude Change

The next step in the analysis of the data was to assess attitude

change as a function of the communication conditions. As noted in Chapter II, the communication conditions were (1) extreme mixed, (2) moderate-mixed, and (3) control (no communication). This assessment is outlined in the analyses presented on this and the following pages.

Position and latitude change scores were derived by subtracting pretest scores from posttest scores for each dimension of the social judgment scale. For example, an individual with a most acceptable position at statement one (statement A) on the pretest and a most acceptable position at statement three (statement C) on the posttest, would have a change score of +2. An example of a region change score would be as follows: an individual who accepted statements A, B, and C (including MA) on the pretest (RA = 3), and who accepted statements B, C, D, and F (including MA) on the posttest (RA = 4) would have a change score of +1 for region of acceptance. Thus, a change score for a position (most acceptable position or most objectionable position) shows a shift in position along the reference scale, while a change in a region shows change in the size of the region--not position. A positive change score for a position would indicate that the individual shifted the position (MA or MO) from the pro end of the scale to the anti end of the scale, and the converse is true for a negative change score. A positive change score for a region, would indicate that the individual increased the region in question from pre to post testing, and conversely, a negative change score would indicate a decrease in the region. Prescores, postscores, and change scores are reproduced in Appendix F (see Key to Original Observations for placement).

χ^2 contingency tests (Walker & Lev, 1953) were performed to test

the relationship between communication conditions and frequency of change for each attitude dimension (MA, RA, MO, RR & RNC). Tables 11 through 25 represent the χ^2 summaries for the issue of gun control legislation. Originally, for all χ^2 analyses, a three by seven contingency matrix was constructed whereby rows represented the communication conditions (extreme, moderate, and control) and columns represented the number of positions (number of statements for regions) changed (from a negative 3 or more in column one, to a positive 3 or more in column seven). For each dimension, the three by seven matrix failed to achieve the required expected frequency of five per cell (Walker & Lev, 1953) which is necessary to perform the χ^2 test. Thus, columns were collapsed until this requirement was met.

For the most acceptable position, a three by five contingency matrix was constructed such that the change scores ranged from a negative 2 or more through a positive 2 or more. This comparison was not significant ($\chi^2 = 9.63$). The columns were further collapsed into a change--no change dichotomy (see Table 11) which was also nonsignificant ($\chi^2 = 4.43$). Both of these outcomes are as predicted in Hypothesis 2. However, in comparing the combination of extreme and moderate conditions against the control condition (see Table 12) a significant difference was found ($\chi^2 = 4.38$, $p < .05$) which indicated that overall, the frequency of change was greater for the two experimental conditions taken together than for the control condition.

To test the differences between communication conditions by frequency of change in the region of acceptance, the three by seven contingency matrix was collapsed into a three by three matrix as shown in

TABLE 11

χ^2 Test on Change in Most Acceptable Position Scores
(Proportions in Parenthesis)

Communication	Change in MA	
	Change	No Change
Extreme	68 (.4570)	81 (.5436)
Moderate	72 (.4675)	82 (.5325)
Control	30 (.3371)	59 (.6629)
$\chi^2 = 4.43$ $df = 2$		NS (N = 392)

TABLE 12

χ^2 Test on Change in Most Acceptable Position Scores, Further Collapsed
(Proportions in Parenthesis).

Communication	Change in MA	
	Change	No Change
Extreme and Moderate	140 (.4620)	163 (.5380)
Control	30 (.3371)	59 (.6629)
$\chi^2 = 4.38$ $df = 1$		$p < .05$ (N = 392)

Table 13. A significant difference was found between communication conditions and frequency of change in the region of acceptance ($\chi^2 = 11.18$, $p < .025$). Differential communication effects were tested by breaking down the contingency matrix into component parts as shown in Tables 14 through 16. From Table 14, it can be seen that there is a significant

TABLE 13

χ^2 Test on Change in Region of Acceptance Scores
(Proportions in Parenthesis)

Communication	Change in RA		
	Negative	0	Positive
Extreme	21 (.1409)	86 (.5772)	42 (.2819)
Moderate	6 (.0390)	96 (.6234)	52 (.3377)
Control	12 (.1348)	54 (.6067)	23 (.2584)
$\chi^2 = 11.18$	df = 4	p < .025	(N = 392)

TABLE 14

χ^2 Test on Change in Region of Acceptance Scores,
Extreme Versus Moderate Communications
(Proportions in Parenthesis)

Communication	Change in RA		
	Negative	0	Positive
Extreme	21 (.1409)	86 (.5772)	42 (.2819)
Moderate	6 (.0390)	96 (.6234)	52 (.3377)
$\chi^2 = 9.85$	df = 2	p < .01	(N = 303)

difference between extreme and moderate communications with respect to the region of acceptance ($\chi^2 = 9.85$, $p < .01$). Table 15 indicates that there is no significant difference between the extreme communication condition and the control condition ($\chi^2 = .20$). From Table 16, it can be seen that

TABLE 15

χ^2 Test on Change in Region of Acceptance Scores,
Extreme Versus Control Communications
(Proportions in Parenthesis)

Communication	Change in RA		
	Negative	0	Positive
Extreme	21 (.1409)	86 (.5772)	42 (.2819)
Control	12 (.1348)	54 (.6067)	23 (.2584)
$\chi^2 = .20$	df = 2	NS	(N = 238)

TABLE 16

χ^2 Test on Change in Region of Acceptance Scores,
Moderate Versus Control Communications
(Proportions in Parenthesis)

Communication	Change in RA		
	Negative	0	Positive
Moderate	6 (.0390)	96 (.6234)	52 (.3377)
Control	12 (.1348)	54 (.6067)	23 (.2584)
$\chi^2 = 8.18$	df = 2	p < .02	(N = 243)

there is a significant difference between the moderate communication condition and the control condition ($\chi^2 = 8.18$, $p < .02$). Looking at the proportion of change within each communication condition (in parentheses in Tables 13, 14, 15, & 16) it appears that there is a trend for subjects in the extreme and control groups to decrease the region of acceptance,

while the trend is for subjects in the moderate group to increase the region of acceptance.

The differences between the communication conditions and change in the most objectionable position was tested in a three by three contingency matrix, and found to be nonsignificant ($\chi^2 = 7.01$). Collapsing columns into a change--no change dichotomy and comparing to the three communications (see Table 17) found a significant difference between communication conditions and frequency of change in the most objectionable position ($\chi^2 = 6.71$, $p < .05$). Differential comparisons between extreme and moderate communications (see Table 18), extreme and control communications (see Table 19), and moderate and control communications (see Table 20) resulted in one significant relationship, e.g., a significant difference between extreme and moderate communication conditions ($\chi^2 = 6.59$, $p < .01$). In addition, comparing the combination of extreme and moderate conditions with the control condition yielded no significant differences ($\chi^2 = .05$) as indicated in Table 21. Looking at the proportion of change (in parentheses, see Tables 17 and 19) it can be seen that overall, the moderate communication group tended to change the most objectionable position more than did either the extreme or control groups. However, this difference appears to be significant only between the moderate and extreme communication groups. This would indicate, then, that subjects receiving the moderate communication change their most objectionable position (in a bidirectional way) more than do the subjects receiving the extreme communication, but not more than subjects receiving the control condition.

χ^2 analyses of the change in region of rejection scores indicated

TABLE 17

χ^2 Test on Change in Most Objectionable Position Scores
(Proportions in Parenthesis)

Communication	Change in MO	
	Change	No Change
Extreme	18 (.1208)	131 (.8792)
Moderate	36 (.2338)	118 (.7662)
Control	15 (.1685)	74 (.8315)
$\chi^2 = 6.71$		df = 2
		p < .05
		(N = 392)

TABLE 18

χ^2 Test on Change in Most Objectionable Position Scores,
Extreme Versus Moderate Communications
(Proportions in Parenthesis)

Communication	Change in MO	
	Change	No Change
Extreme	18 (.1208)	131 (.8792)
Moderate	36 (.2338)	118 (.7662)
$\chi^2 = 6.59$		df = 1
		p < .01
		(N = 303)

TABLE 19

χ^2 Test on Change in Most Objectionable Position Scores,
 Extreme Versus Control Communications
 (Proportions in Parenthesis)

Communication	Change in MO	
	Change	No Change
Extreme	18 (.1208)	131 (.8792)
Control	15 (.1685)	74 (.8315)
$\chi^2 = 1.06$	df = 1	NS
		(N = 238)

TABLE 20

χ^2 Test on Change in Most Objectionable Position Scores,
 Moderate Versus Control Communications
 (Proportions in Parenthesis)

Communication	Change in MO	
	Change	No Change
Moderate	36 (.2338)	118 (.7662)
Control	15 (.1685)	74 (.8315)
$\chi^2 = .19$	df = 1	NS
		(N = 243)

TABLE 21

χ^2 Test on Change in Most Objectionable Position Scores,
Extreme and Moderate Versus Control Communications
(Proportions in Parenthesis)

Communication	Change in MO	
	Change	No Change
Extreme and Moderate	54 (.1782)	249 (.8218)
Control	15 (.1685)	74 (.8315)
$\chi^2 = .05$	df = 1	NS (N = 392)

no significant differences between communication conditions and change in region of rejection as indicated in Table 22 ($\chi^2 = 2.68$). Testing the combination of extreme and moderate conditions against the control condition also yielded no significant differences (see Table 23, $\chi^2 = 1.28$).

TABLE 22

χ^2 Test on Change in Region of Rejection Scores
(Proportions in Parenthesis)

Communication	Change in RR	
	Change	No Change
Extreme	72 (.4832)	77 (.5168)
Moderate	64 (.4156)	90 (.5844)
Control	46 (.5168)	43 (.4831)
$\chi^2 = 2.68$	df = 2	NS (N = 392)

Analyses of the change in region of noncommitment scores yielded no significant differences with respect to communication conditions. As

indicated in Table 24, there are no significant differences between communication conditions and change in the region of noncommitment ($\chi^2 = 1.16$), while Table 25 indicates no significant differences when the extreme and moderate communications are combined against the control condition ($\chi^2 = .00$).

TABLE 23

χ^2 Test on Change in Region of Rejection Scores, Further Collapsed
(Proportions in Parenthesis)

Communication	Change in RR	
	Change	No Change
Extreme and Moderate	136 (.4488)	167 (.5512)
Control	46 (.5168)	43 (.4831)
$\chi^2 = 1.28$	df = 1	NS
		(N = 392)

TABLE 24

χ^2 Test on Change in Region of Noncommitment Scores
(Proportions in Parenthesis)

Communication	Change in RNC	
	Change	No Change
Extreme	97 (.6510)	52 (.3490)
Moderate	91 (.5909)	63 (.4091)
Control	55 (.6180)	34 (.3820)
$\chi^2 = 1.16$	df = 2	NS
		(N = 392)

TABLE 25

χ^2 Test on Change in Region of Noncommitment Scores, Further Collapsed
(Proportions in Parenthesis)

Communication	Change in RNC	
	Change	No Change
Extreme and Moderate	188 (.6205)	115 (.3795)
Control	55 (.6180)	34 (.3820)
$\chi^2 = .00$	df = 1	NS (N = 392)

In addition to the χ^2 analyses, analyses of variance were also performed to test the effects of sex, experimenter, communication and their interactions on the change scores for each dimension of the attitude scale. These analyses can be seen in Tables 26 through 30. The only significance found (see Table 28) was an interaction between sex and experimenter for the change in most objectionable position scores ($F = 4.878$, $p < .01$). Graphing the interaction (see Figure 11) indicates that for Experimenter 2, the most objectionable position for males tends to shift toward the anti gun control end of the scale, while the most objectionable position for females tends to shift toward the pro gun control end of the scale.

Communication Evaluation

As noted in Chapter II, a pilot study was conducted to see if the communications were being perceived as equally mixed with pro and con arguments for the issue of gun control legislation. It was considered desirable to measure this dimension during the actual experiment due to

TABLE 26

Analysis of Variance on Change in Most Acceptable Position Scores

Source	MS	df	F	p
Sex (S)	0.060	1	0.042	NS
Experimenter (E)	3.362	2	2.377	NS
Communication (C)	3.569	2	2.522	NS
S x E	0.707	2	0.500	NS
S x C	0.419	2	0.296	NS
E x C	2.679	4	1.894	NS
S x E x C	3.030	4	2.142	NS
Error	1.415	374		

TABLE 27

Analysis of Variance on Change in Region of Acceptance Scores

Source	MS	df	F	p
Sex (S)	0.440	1	0.774	NS
Experimenter (E)	0.352	2	0.620	NS
Communication (C)	1.286	2	0.264	NS
S x E	1.252	2	2.203	NS
S x C	0.480	2	0.845	NS
E x C	0.280	4	0.493	NS
S x E x C	0.167	4	0.295	NS
Error	0.568	374		

TABLE 28

Analysis of Variance on Change in Most Objectionable Position Scores

Source	MS	df	F	p
Sex (S)	0.940	1	0.133	NS
Experimenter (E)	15.473	2	2.185	NS
Communication (C)	18.203	2	2.570	NS
S x E	34.545	2	4.878	< .01
S x C	3.400	2	0.480	NS
E x C	7.369	4	1.041	NS
S x E x C	8.090	4	1.142	NS
Error	7.082	374		

TABLE 29

Analysis of Variance on Change in Region of Rejection Scores

Source	MS	df	F	p
Sex (S)	0.042	1	0.040	NS
Experimenter (E)	1.843	2	1.760	NS
Communication (C)	0.383	2	0.366	NS
S x E	1.554	2	1.484	NS
S x C	0.782	2	0.747	NS
E x C	1.105	4	1.055	NS
S x E x C	0.767	4	0.733	NS
Error	1.047	374		

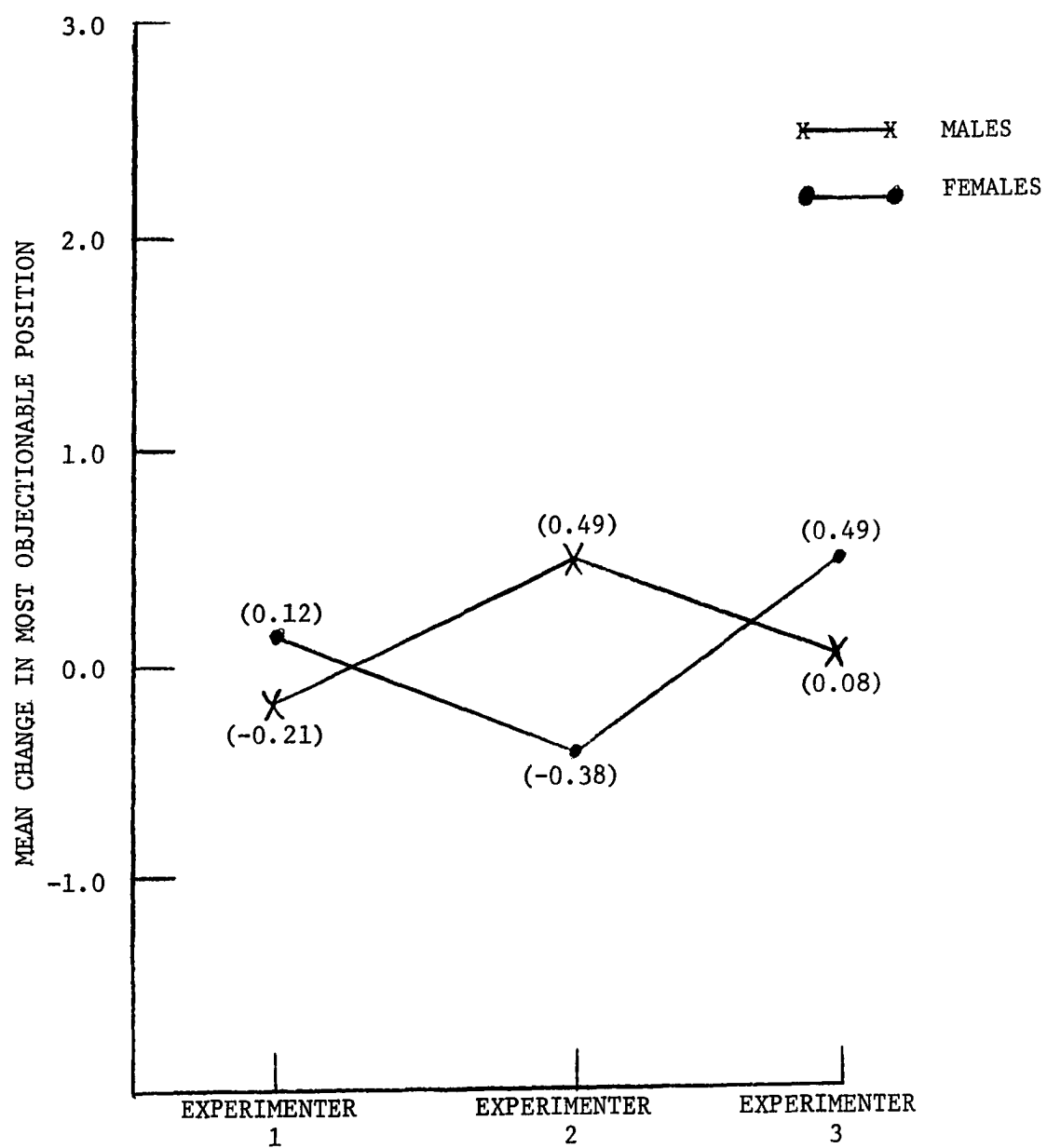


Fig. 11. Interaction of Sex and Experimenter for Change in Most Objectionable Position

TABLE 30

Analysis of Variance on Change in Region
of Noncommitment Scores

Source	MS	df	F	p
Sex (S)	0.163	1	0.087	NS
Experimenter (E)	0.095	2	0.051	NS
Communication (C)	0.978	2	0.523	NS
S x E	0.006	2	0.003	NS
S x C	0.493	2	0.264	NS
E x C	1.265	4	0.677	NS
S x E x C	1.194	4	0.640	NS
Error	1.867	374		

the editorial changes made in the original communications. The results of this analysis are summarized in Tables 31 and 32. From these tables, it can be seen that the mean rating of the extreme communication was 4.22 for those subjects receiving the extreme communication; and for the moderate communication the mean was 4.44 across subjects receiving the moderate communication. Since control subjects received no communication, no rating was made for that group. It is concluded from these analyses that both communications were perceived by the subjects as being equally mixed with pro and anti arguments.

Additional Analyses

Subjects were asked to rate the author and article dealing with (1) intelligence of the author, (2) expertness of the author, (3) bias of the article, and (4) factual basis of the article. Analysis of variance was performed to test communication and sex effects for each question. Note that the control groups did not answer these questions as they

TABLE 31

Placement of Extreme Communication on a Nine Point Social
Judgment Scale (Main Experiment)

	Position of Extreme Communication								
	1	2	3	4	5	6	7	8	9
Frequency	16	10	22	18	62	9	5	3	3
N = 148									
M = 4.22									

TABLE 32

Placement of Moderate Communication on a Nine Point Social
Judgment Scale (Main Experiment)

	Position of Moderate Communication								
	1	2	3	4	5	6	7	8	9
Frequency	10	15	14	15	77	10	7	2	3
N = 153									
M = 4.44									

received no communication. The summaries of these analyses can be seen in Tables 33 through 36.

Regarding the rating of expertness, Table 33 indicates a significant communication main effect ($F = 6.502$, $p < .05$), and a significant sex main effect ($F = 6.452$, $p < .05$). Graphing the main effects (see Figure 12 and 13) indicate that individuals receiving the moderate communication rated the author as being more of an expert than did those subjects receiving the extreme communication; and females saw the author, regardless

of which communication they read, as being more of an expert than did males.

TABLE 33
Analysis of Variance on Rating of Expertness
of the Author Scores

Source	MS	df	F	p
Communication (C)	19.259	1	6.502	< .05
Sex (S)	19.111	1	6.452	< .05
C x S	.000	1	.000	NS
Error	2.962	296		

For the question dealing with intelligence of the author, it can be seen from Table 34 that there is a significant communication by sex interaction ($F = 21.175$, $p < .01$). The graph of this interaction (see Figure 14) indicates that for the extreme communication, females saw the author as being more intelligent than did males.

TABLE 34
Analysis of Variance on Rating of Intelligence
of the Author Scores

Source	MS	df	F	p
Communication (C)	.074	1	.051	NS
Sex (S)	3.111	1	1.976	NS
C x S	33.333	1	21.175	< .01
Error	1.574	296		

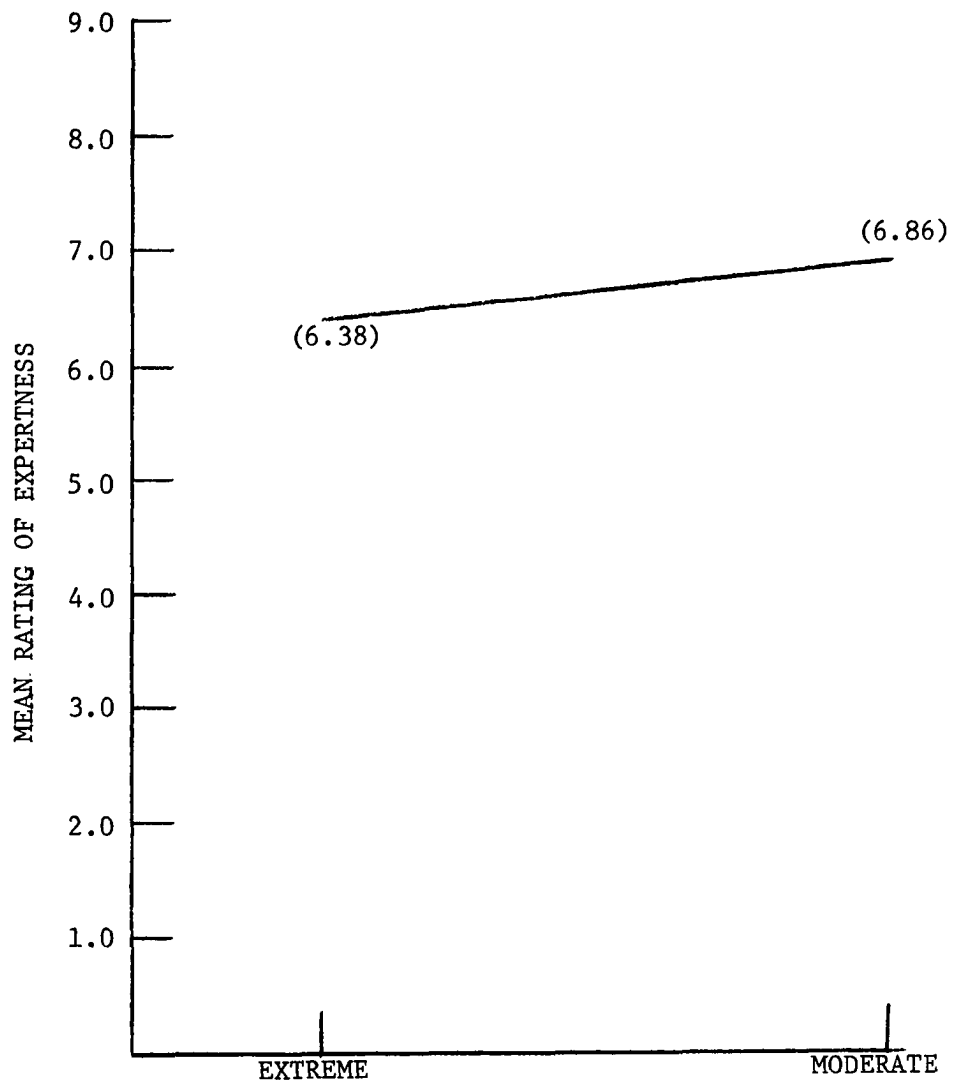


Fig. 12. Communication Main Effect for Rating of Expertness of the Author

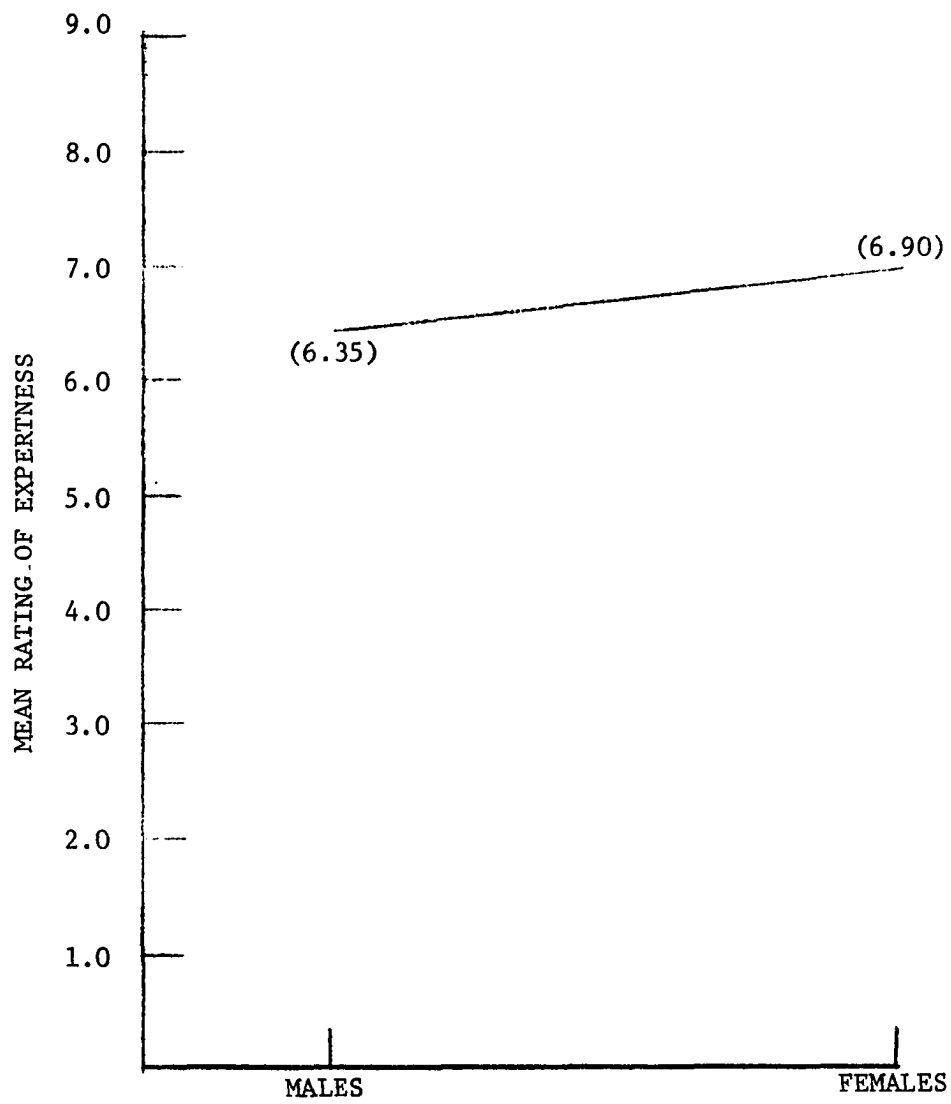


Fig. 13. Sex Main Effect for Rating of Expertness of the Author

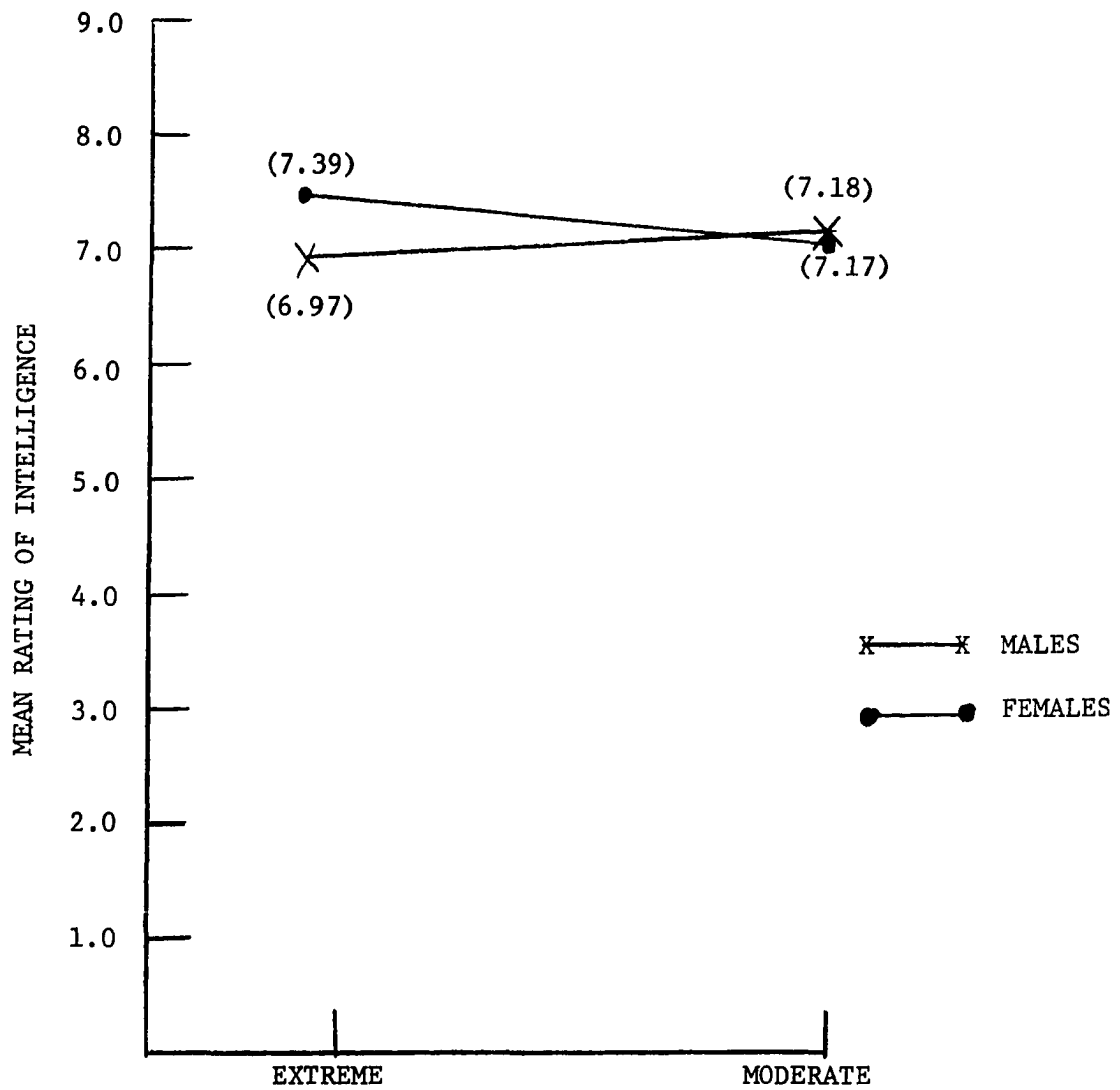


Fig. 14. Interaction of Communication and Sex for Rating of Intelligence of the Author

Analysis of variance on the rating scores for the question on bias of the article (Table 35) indicates a significant interaction between communication and sex ($F = 6.699$, $p < .05$). Figure 15 indicates that for the extreme communication, males saw the article as more biased than did females.

TABLE 35

Analysis of Variance on Rating of Bias of the Article Scores

Source	MS	df	F	p
Communication (C)	23.037	1	3.399	NS
Sex (S)	17.111	1	2.524	NS
C x S	45.407	1	6.699	< .05
Error	6.778	297		

There were no significant differences found in the analysis of the question asking subjects to rate the factual basis of the article (see Table 36).

TABLE 36

Analysis of Variance on Rating of Factual Basis
of the Article Scores

Source	MS	df	F	p
Communication (C)	3.704	1	1.342	NS
Sex (S)	4.815	1	1.774	NS
C x S	8.518	1	3.086	NS
Error	2.760	198		

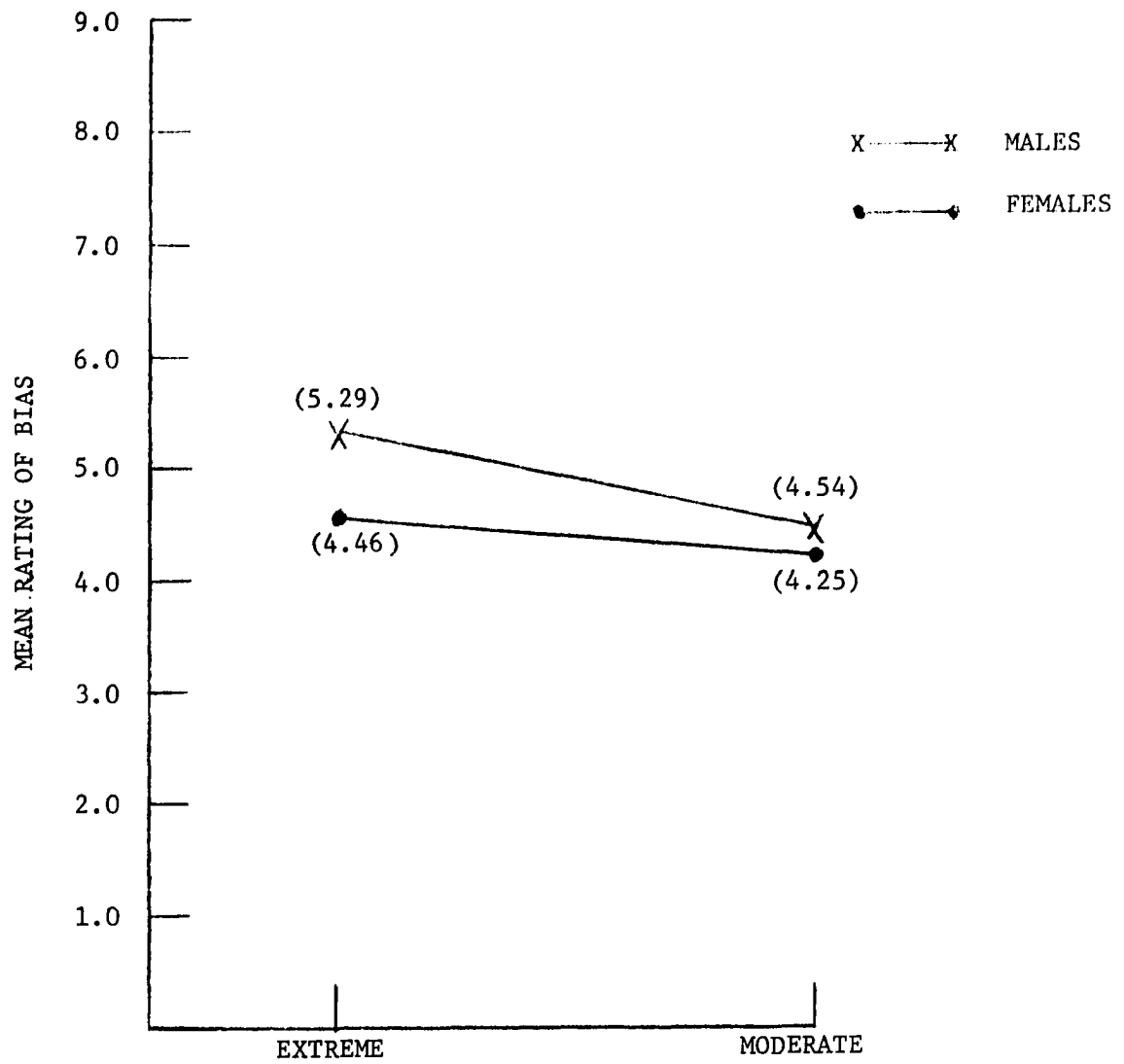


Fig. 15. Interaction of Communication and Sex Rating of Bias of the Article

In addition to these analyses, correlations were also performed to check the ratings regarding the author and the article against the attitude dimensions of the social judgment scale (MA, RA, MO, RR & RNC) for both the pretest and the change scores. While there were some statistically significant relationships, none reached the arbitrary .40 criterion level. Those correlations can be found in Appendix G.

Analysis of variance were also used to test the last two questions dealing with perceived purpose and trickery of the experiment. From Tables 37 and 38, it can be seen that there are no significant differences for either question.

TABLE 37
Analysis of Variance on Perceived Purpose
of the Experiment Scores

Source	MS	df	F	p
Sex (S)	0.071	1	0.896	NS
Experimenter (E)	0.106	2	1.346	NS
Communication (C)	0.046	2	0.580	NS
S x E	0.097	2	1.236	NS
S x C	0.013	2	0.164	NS
E x C	0.041	4	0.518	NS
S x E x C	0.033	4	0.425	NS
Error	0.079	359		

In summary, χ^2 analyses and analyses of variance indicated that the first hypothesis (changing the region of noncommitment, differentially, with two-sided, mixed, extreme and moderate communication) was not supported. However, significant change in the region of acceptance was found. The second hypothesis (two-sided, mixed, extreme and moderate

TABLE 38

Analysis of Variance on Perceived Trickery
in the Experiment Scores

Source	MS	df	F	p
Sex (S)	0.446	1	3.322	NS
Experimenter (E)	0.075	2	0.556	NS
Communication (C)	0.009	2	0.066	NS
S x E	0.144	2	1.075	NS
S x C	0.016	2	0.123	NS
E x C	0.082	4	0.607	NS
S x E x C	0.069	4	0.517	NS
Error	0.134	362		

communications would not cause a change in the most acceptable position) was partially supported, i.e., neither communication changed the most acceptable position; but both communications, taken together, did cause a slight change in the most acceptable position.

In addition to these findings, correlational analyses of pretest scores indicated that (1) the more extreme the most acceptable position, the more extreme the most objectionable position, (2) the regions of acceptance and rejection are reciprocally related, and (3) the regions of acceptance and rejection were not related except through the region of noncommitment. Analyses of variance on pretest scores indicated initial sex differences for most acceptable position, region of acceptance, and most objectionable position with regard to the issue of gun control legislation, i.e., females were more pro gun control legislation than males.

CHAPTER IV

DISCUSSION

As noted in Chapter I, the purpose of the present study was to make a contribution in the redefinition of the concept of attitude change. Historically attitude change has largely been viewed as a single point or mean value point change along a psychological reference scale. While Sherif discusses the concept of attitude as being more than a single point along a continuum, he disregards his own criticism of the point fallacy when discussing the concept of attitude change. Attitude change for Sherif, by and large, is a change in the individual's own or most acceptable position, the major anchor used in analyzing and placing incoming information along a psychological reference scale. However, if an attitude consists of more than just the own or most acceptable position, then attitude change should be construed as changing any or all of the elements making up the attitude. In the case of Sherifian theory, these elements besides own position consist of (1) region of acceptance, (2) most objectionable position, (3) region of rejection, and (4) region of noncommitment.

Since preceding studies (cited in Chapter I) tested the effects of extremity of communication on attitude change (change in most acceptable position or some other point measure) by using either both extreme or

moderate one-sided communications, the present study tested the effects of the discrepancy dimension of communication by use of extreme-mixed and moderate-mixed, two-sided communications in an attempt to change the region of noncommitment without changing the most acceptable position.

From the χ^2 analyses (see Table 11 through 25) and analyses of variance (see Tables 26 through 30, and Figure 11) it is evident that neither hypothesis (see Chapter I, p. 34) was verified; however, some support was gained for hypothesis 2. The main hypothesis (Hypothesis I) predicted differential change in the region of noncommitment due to extreme-mixed and moderate-mixed communications. While no significant change was noted for this latitudinal dimension, significant change was found in the region of acceptance. For the region of acceptance, there was a significant tendency for subjects receiving the extreme-mixed communication and subjects receiving no communication (control subjects) to reduce their regions of acceptance. However, subjects who received the moderate-mixed communication tended to increase their regions of acceptance.

One possible explanation for these differences is that individuals who received the moderate-mixed communication viewed it as giving support to their side and additional information about the problems associated with the opposite side of the argument. Thus, with the additional information they were able to become more accepting of the other view by expanding the region of acceptance and drawing back on either or both the regions of noncommitment and rejection. If, as Sherif contends, the regions of noncommitment and rejection are reciprocally related in attitude formation, then one would expect that a change in one would

necessitate a change in the other (note that studies cited in Chapter I indicate that they may not be so related). Since the region of acceptance is not, according to Sherif, a function of either noncommitment or involvement (RNC & RR), but tends to remain stable across subjects; than a change in the region of acceptance without significantly changing either the region of noncommitment or the region of rejection is a possible expectation. However, the region of acceptance was significantly related to the region of noncommitment (see Table 5, Chapter III) in the present study.

One explanation for the negative shift in the region of acceptance for subjects receiving the extreme-mixed condition and the control condition might be that they were showing reactive effects to the experimental situation: a boomerang effect. Control subjects would have become annoyed at sitting silently for eight minutes to consider an issue about which they had already made up their minds. The group receiving the extreme-mixed communication, on the other hand, might have viewed the language used in the communication as being offensive and thereby reacting in a negative way, i.e., by becoming less accepting of the other side.

Other possible explanations for the changes found in the region of acceptance come from the abundant literature dealing with the effects of two-sided communications (Hovland, et al., 1957; Rosnow, 1966; Holz & Rosnow, 1967). According to a review of primacy-recency effects by Rosnow (1966), Sherif (Sherif & Hovland, 1961; Sherif, Sherif & Nebergall, 1965) predicts that with high ego-involvement and widely discrepant communication, less attitude change will occur than with low ego-involvement

and wide discrepancy for two-sided communications. However, as Sherif notes: ". . . susceptibility to change with communication (whether first or last) is related to the frequency of noncommitment. . . . The point could be phrased in reverse fashion: high ego involvement in a stand results in resistance to change. . . (p. 184)." While Sherif then goes on to agree with McGuire's (1962, 1964) explanation of the effects of two-sided communications in future attempts in persuasion, the essence of Sherif's position is that in the initial persuasion situation where the individual is presented with a two-sided communication, there is no difference between one and two-sided communications with respect to attitude change. While ego-involvement in the present study was not associated with attitude change (correlation between RR--pretest and change in MA = $-.05$), communication differences were. If, as Sherif postulates, there is no difference in the effects of one and two-sided communications on attitude change, then it would be expected that individuals receiving the moderate-mixed communication would show more positive attitude change than would those receiving the extreme-mixed communication. Further, by Sherif's conceptualization, a boomerang effect could also be predicted. However, two things must be kept in mind if interpreting the results in this manner: (1) Sherif was referring to change in the own or most acceptable position; not in the region of acceptance as was found in this study, and (2) the type of two-sided communication which has been used in all studies, except this one, were not mixed-communications. This second point needs to be emphasized. The main objective in using mixed-communications in the present study as opposed to presenting first one side of the argument then the other (as done in all other studies using two-sided

communications) was an attempt to avoid the problems associated with two-sided communications such as primacy-recency. Whether presenting mixed-communications will solve the problems inherent with two-sided communications is beyond the scope of the present study, and is an item for further experimentation. However, since no directional changes were found by analysis of variance, and until further research is conducted, it is assumed that effects such as primacy-recency are not related to the present study.

Other research, dealing with one and two-sided (unmixed) communications (Schultz, 1963; Holz & Rosnow, 1967) indicates that subject awareness affects attitude change. These studies indicate the following: (1) one-sided communications are more effective than two-sided communications when the subject is aware that the experimenter (or source) is trying to persuade him to change his opinion, and (2) the two-sided communication is more effective than the one-sided communication when the subject is unaware of the experimenter's intent. While analysis of the purpose and trickery questions (see Tables 37 and 38) yielded no significant differences between groups, preliminary instructions did sensitize subjects in each experimental and control group to change. In other words, while subjects were unaware that differential change to the extreme-mixed and moderate-mixed communications was sought, they were aware that change was expected. In both the Schultz, and Holz and Rosnow studies, discrepancy of communication was not varied and should be considered an item for future research, insofar as the present study found positive change with a moderate-mixed communication and negative change with an extreme-mixed communication. Again, it must be pointed out that

the change found in the present study was in the region of acceptance, not in own position on which two-sided communication studies are based.

With respect to own position and awareness, however, it will be recalled that the second hypothesis of this study predicted that neither the extreme-mixed communication nor the moderate-mixed communication would cause a change in the most acceptable position. While neither communication did cause a change in the own position, both communications, taken together, did cause a slight, bidirectional change in the most acceptable position. If the two-sided mixed-communications were having the same effects on attitude change as two-sided communications usually used, then this change would not be expected. However, change in the most acceptable position might have been a product of the change in the most objectionable position, which was significant only for the moderate communication. It was noted that many individuals were end-switching their most objectionable positions pre to post. In other words, subjects were choosing an extreme end position as being most objectionable on the pretest, and switching to the opposite end on the posttest as being most objectionable. If the communication was having a reactive effect of causing individuals to shift their most objectionable position, then possibly, the most acceptable position would have to be moved to accommodate the shift in most objectionable position. For example, an individual who selects statement A on the pretest as most acceptable and statement I as most objectionable, and then switches the most objectionable position to statement A on the posttest would have to move his most acceptable position. It is also interesting to note that of the 69 individuals (all groups taken together) who changed their most objectionable

positions, 39 held pro gun control most acceptable positions on the pre-test, 21 held neutral positions, and 9 held anti own positions. On the basis of equiprobability (goodness of fit) these differences are highly significant ($\chi^2 = 19.83$, $p < .001$). With this last result in mind, the questions must be asked: "What about the individual who holds a pro position, and the individual who holds an anti position on an issue?" Why does one change and not the other? Is this an artifact of the present experiment? If not, why have not these results been reported elsewhere? It is possible that some individuals would rather commit themselves positively to an issue than commit themselves against the issue or not at all (remain noncommittal). However, if this were the case we would expect the majority of these individuals to choose as their most acceptable positions, statement 4, a moderately pro position. This was not the case. Of the 39 pro individuals who changed their most objectionable position, only 12 (less than one-third) selected statement 4 as their most acceptable position. Since there was not a significant correlation between most acceptable position and ego-involvement (region of rejection), which would be expected by Sherifian theory since the relationship should be curvilinear, the question can be asked is there less stability in commitment for individuals pro an issue than individuals anti an issue? Does involvement mean the same thing for each group? Is the individual who is highly committed to the pro side of an issue showing the same commitment as the individual who is highly committed to the anti side of an issue? If there is a difference, it should appear in the change of the region of rejection, if indeed the region of rejection measures commitment; but no significant

differences were found in this area. The difference between pro and anti subjects, then, is another item for future research. However, another explanation is also possible regarding change in the most objectionable position. Recall from the analyses of variance, there was a significant sex by experimenter interaction found (see Figure 11). With this interaction in mind, it is possible that frequency changes as found by the χ^2 test were due to Experimenter 2.

While neither hypothesis in the present study was confirmed regarding attitude change, some support was gained for the second hypothesis. It appears, although these results are inconclusive, that an attitudinal dimension other than own position can be changed without affecting own position. While further research is definitely needed to confirm this conclusion, it hopefully allows for a change in interpreting the concept of attitude change. Built into Sherif's conception of attitude and attitude change is the fundamental notion that attitude change is a judgmental process; that if the attitude in question is to be changed, one must change the anchor by which all incoming information is judged. In the long run, i.e., over time, this may well be true. However, by changing other elements of the attitude one may be able to better change (faster and easier) the main reference anchor. Only further experimentation will indicate the answer. The assumption that an individual's attitudes toward gun control legislation were changed in the present study, or in any of the experiments reviewed in the present study, is tenuous indeed. It would be more correct to say that individuals were responding to a communication or communications or experimental situations in which they found themselves. As Rand (1967) so aptly pointed out:

". . . a situational change in one's attitude was noted. How long this change would exist was not the purpose of this study and therefore was not examined (p.79)." Rand's conclusions apply to the present study as well.

The Issue of Gun Control Legislation

While not germane to the hypotheses tested, some information regarding the issue of gun control legislation was gained through analysis of the pretest data. From the analyses of variance on the dimensions of the social judgment questionnaires, significant differences between males and females were found for most acceptable position, region of acceptance, and most objectionable position. These differences indicated that females tend to be more in favor of gun control legislation than are males. These results are in line with the latest Gallup Poll taken in August, 1967. In this poll, Gallup found that 81% of the females in his sample were in favor of requiring a police permit before purchasing a firearm. Only 63% of the males in the sample were in favor of such legislation. Thus, the sample represented in this study is similar to Gallup's sample in attitudes toward gun control legislation.

Perception of Communication and Author

In line with the results that females are more in favor of gun control legislation than are males, the same type or order of effect is seen from the analyses of the questions pertaining to perceived intelligence and expertness of the author, and bias and factual base of the article. Individuals receiving the moderate communication saw the author as being more of an expert in his field than did individuals reading the

extreme communication. By the same token, females, regardless of which communication they read, saw the author as being more of an expert in his field than did males. However, regarding the question of intelligence of the author, it was the females who read the extreme communication who saw the author as being more intelligent, and males who read the extreme communication saw the author as being least intelligent. Regarding the male subject, the same pattern is seen for the question of bias of the article. Males who read the extreme communication perceived it as being more biased than did females. These relationships would be expected due to the pre-test results presented above, except for the differences found for females on the question of intelligence of the author. It would be expected that males receiving the extreme communication would see the author as being less intelligent than would the other groups, but it would not be expected that females receiving the extreme communication would see the author as being more intelligent than the other groups. On the basis of Sherifian theory, i.e., moderate communications being more effective than extreme communications, one would expect the females who read the moderate communication to have the highest perceptions of the author. This effect could have been due to an order effect, in that the intelligence question was the first answered for all subjects.

Implications for Future Research

The present study has several implications for future research. While the main hypothesis was not confirmed, it does appear as if an attitudinal dimension can be changed other than most acceptable position. Further research needs to verify this conclusion. Also, it would be

interesting to find out in what way each of the attitude dimensions (most acceptable position, region of acceptance, most objectionable position, region of rejection, and region of noncommitment) can be changed one at a time. For instance, would it be easier to make an individual less rejecting than more accepting. The ethical implications of finding these results are obvious, but practical implications of changing attitudes toward issues such as birth control, racism, pollution, etc. are also obvious.

Another implication for future research would be to take a good look at the written persuasive communication. Does the written communication provide pressure to change or is it an artifact of the experimental situation? Field research would be necessary to test this question.

Also, what of the subject who is in favor of an issue as opposed to one against an issue. Does one change his opinion easier than another? Are individuals more committed to what they are against than what they are for?

Finally, what are the psychological aspects of mixed versus unmixed communications? Will they solve problems such as primacy-recency that are inherent in two-sided communications and are they persuasive in nature?

CHAPTER V

SUMMARY

Historically, four major techniques for the measurement of attitude and attitude change have been developed in one line of research. These were (1) Thurstone's equal appearing interval scaling technique, (2) Likert's internal consistency technique, (3) Guttman's scalogram analysis, and (4) Sherif's social judgment-involvement approach. Common to the first three techniques is an error underlying the basis of measurement termed the point fallacy. The point fallacy is the erroneous assumption that an attitude can be adequately represented by a point along a psychological reference continuum. Sherif's approach was designed to solve that problem.

For Sherif, attitudes are categories the individual forms in relation to various related stimuli as he learns about that stimulus domain. Thus, the individual has not only an own position which would be analogous to the point measures used by the other scales, but he also has areas which he accepts and rejects, and prefers to remain noncommittal about. The own or most acceptable position is considered the primary anchor by which the individual judges incoming information as being either acceptable or objectionable. If the information is judged acceptable, it is placed within the latitude of acceptance. If it is judged

objectionable, it is placed within the latitude of rejection by reference to the most objectionable position.

While Sherif related the point fallacy to the measurement of attitudes, he did not relate it to the measurement of attitude change. Attitude change for Sherif is considered to be a change in the individual's own position. The purpose of the present study was to contribute to the redefinition of the construct attitude change as being more than a single point measure. Previous research indicated that the most common approach to the study of attitude change was to test the effects of communication discrepancy on attitude change using one-sided written communications. The present study tested the discrepancy dimension by using two-sided mixed-communications. The following were hypothesized:

1. A mixed-moderate and a mixed-extreme two-sided communication will differentially effect the region of noncommitment.
2. Neither a mixed-moderate nor a mixed-extreme two-sided communication will cause a change in the most acceptable position.

Four hundred and forty-one male and female subjects were tested in the classroom situation in a modified pretest-posttest control group design patterned after Campbell and Stanley (1963). Of the 441 subjects tested, 392 were used for analysis. Of these 392, 149 received the extreme communication, 154 received the moderate communication, and 89 received the control (no communication) condition.

For the pretest, subjects were instructed that the department of Psychology and Sociology was conducting a research program consisting of a survey on feelings about gun control legislation. They were further told that after answering the survey questionnaire, they would read an article on gun control which was written by a leading political scientist,

and would then answer another questionnaire to see if they still felt the same way. Control subjects were given basically the same instructions, except that they were asked to remain silent for a period of time for further thought on the issue. Subjects in the experimental groups read the communication immediately after answering the pre social judgment questionnaire, and answered the post social judgment questionnaire immediately after reading the communication. In addition, subjects rated where they perceived the communication fell on the social judgment scale; rated the author and article on four nine-point rating scales which dealt with intelligence and expertness of the author, and bias and factual base of the article; and finally, two open-ended questions to see what they believed the true purpose of the experiment to be, and if they felt they were being tricked by the experimenter.

χ^2 tests and analyses of variance indicated that the first hypothesis was not supported, but yielded partial support for the second hypothesis. In addition, significant change was found for the region of acceptance, indicating that subjects receiving the moderate communication increased their latitude of acceptance, while subjects receiving the extreme communication and control subjects decreased their latitude of acceptance. Possible explanations for these results were that extreme and control group subjects were showing reactive effects to the language of the communication, and to the experimental situation respectively; while the moderate communication group perceived the communication as giving support for their side while giving information about the opposite side. In addition, current theory regarding expectations from two-sided communications was discussed.

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APPENDIXES

APPENDIX A

SOCIAL JUDGMENT SCALES FOR PILOT I

Issue of Gun Control Legislation

- A. Gun control legislation is absolutely desirable for the welfare of the nation and its people.
- B. Gun control legislation is extremely desirable for the welfare of the nation and its people.
- C. Gun control legislation is probably desirable for the welfare of the nation and its people.
- D. Gun control legislation seems somewhat desirable for the welfare of the nation and its people.
- E. It is hard to decide whether gun control legislation is desirable or undesirable for the welfare of the nation and its people.
- F. Gun control legislation seems somewhat undesirable for the welfare of the nation and its people.
- G. Gun control legislation is probably undesirable for the welfare of the nation and its people.
- H. Gun control legislation is extremely undesirable for the welfare of the nation and its people.
- I. Gun control legislation is absolutely undesirable for the welfare of the nation and its people.

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Issue of Movie Censorship

- A. Censorship of movies is absolutely essential for the best interests of the public.
- B. Censorship of movies is extremely essential for the best interests of the public.
- C. Censorship of movies is definitely a more valuable influence than a detrimental influence for the best interests of the public.
- D. Censorship of movies is probably more of a valuable influence for the best interests of the public.
- E. It is very difficult to decide whether or not censorship of movies is a valuable or a detrimental influence for the best interests of the public.
- F. Censorship of movies is probably more of a detrimental influence for the best interests of the public.
- G. Censorship of movies is definitely a more detrimental influence than valuable influence for the best interests of the public.
- H. Censorship of movies is extremely detrimental for the best interests of the public.
- I. Censorship of movies is absolutely detrimental for the best interests of the public.

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Issue of Capital Punishment

- A. Capital punishment is absolutely essential for the prevention of crime.
- B. Capital punishment is extremely essential for the prevention of crime.
- C. Capital punishment is definitely essential for the prevention of crime.
- D. Capital punishment is probably essential for the prevention of crime.
- E. It is very difficult to decide whether or not capital punishment is essential for the prevention of crime.
- F. Capital punishment is probably nonessential for the prevention of crime.
- G. Capital punishment is definitely nonessential for the prevention of crime.
- H. Capital punishment is extremely nonessential for the prevention of crime.
- I. Capital punishment is absolutely nonessential for the prevention of crime.

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Issue of Federal Antipoverty Program
Form I

- A. It is absolutely essential from all angles in our country's interest that the Federal Antipoverty Program (Office of Economic Opportunity) be expanded.
- B. Essentially the interests of our country will be served best by our expanding the Federal Antipoverty Program (Office of Economic Opportunity).
- C. It seems that our country's interests would be better served by our expanding the Federal Antipoverty Program (Office of Economic Opportunity).
- D. Although it is hard to decide, it is probable that our country's interests would be better served by our expanding the Federal Antipoverty Program (Office of Economic Opportunity).
- E. From the point of view of our country's interests, it is hard to decide whether or not we should continue the Federal Antipoverty Program (Office of Economic Opportunity).
- F. Although it is hard to decide, it is probable that our country's interests would be better served if we reduced the Federal Antipoverty Program (Office of Economic Opportunity).
- G. It seems that our country's interests would be better served if we reduced the Federal Antipoverty Program (Office of Economic Opportunity).
- H. Essentially the interests of our country will be served best if we reduce the Federal Antipoverty Program (Office of Economic Opportunity).
- I. It is absolutely essential from all angles in our country's interests that the Federal Antipoverty Program (Office of Economic Opportunity) be abolished.

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Issue of Federal Antipoverty Program
Form II

- A. It is absolutely essential from all angles in our country's interest that the Federal Antipoverty Program (Office of Economic Opportunity) be expanded.
- B. Essentially the interests of our country will be served best by our expanding the Federal Antipoverty Program (Office of Economic Opportunity).
- C. It seems that our country's interests would be better served by our expanding the Federal Antipoverty Program (Office of Economic Opportunity).
- D. Although it is hard to decide, it is probable that our country's interests would be better served by our expanding the Federal Antipoverty Program (Office of Economic Opportunity).
- E. From the point of view of our country's interests, it is hard to decide whether or not we should expand or reduce the Federal Antipoverty Program (Office of Economic Opportunity).
- F. Although it is hard to decide, it is probable that our country's interests would be better served if we reduced the Federal Antipoverty Program (Office of Economic Opportunity).
- G. It seems that our country's interests would be better served if we reduced the Federal Antipoverty Program (Office of Economic Opportunity).
- H. Essentially the interests of our country will be served best if we reduce the Federal Antipoverty Program (Office of Economic Opportunity).
- I. It is absolutely essential from all angles in our country's interests that the Federal Antipoverty Program (Office of Economic Opportunity) be abolished.

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APPENDIX B

COMMUNICATIONS FOR PILOT II

Extreme Communication

Gun Control Legislation The Pros and Cons

Lawrence A. Rudin
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Ever since the wanton slaying of President John F. Kennedy, the mental health of the American Society and the long accepted "right" of some 200 million Americans to own and use guns are being severely questioned. Strong demands for gun control legislation are being made by a great many American people. However, other Americans definitely oppose any legislation to control guns. Why does this disagreement between members of one nation exist. The following are some of the main points given by both advocates and opponents of gun control legislation.

From the beginning of this century, 170,000 more Americans have been needlessly killed at home by guns than have been fatally wounded in all the wars in America's history. By 1967, death by guns reached a paramount of more than 20,000 a year--an astonishing 55 per day or one killing every 2-1/2 hours. Today the United States is virtually an armed camp with an estimated 200 million privately owned guns readily available for murder at the slightest provocation. The Gallup Poll shows that every other American household has at least one gun!

There are a multitude of examples of senseless and horrible deaths due to guns. In Gunnison, Colorado, Robert Dulaney was riding down a dirt road on his motorcycle. His two sons followed him on another. Dulaney heard a shot, turned and saw his 15 year old son Kirk fall to the ground dead. Then his 10 year old son was killed. Down the road, Dulaney found a middle-aged hunter with a .30-'06 rifle. The hunter was sorry when he explained that he had mistaken the boys (who were wearing red hats and riding a red motorcycle) for an elk. No one can forget

Charles Whitman--the Texas sniper--who brutally murdered 13 people and wounded 43 others from a tower on the University of Texas campus two years ago. Also four of the 37 presidents of the United States have fallen to the merciless bullet of an assassin--not to mention the vicious slaughter of Sen. Robert F. Kennedy and the Rev. Martin Luther King.

Opponents of gun control legislation, on the other hand, rigorously argue that this type of legislation shows a morale-crushing lack of faith in the integrity and good intentions of the American people by some Congressmen and anti-gun extremists who are demanding that all private ownership of firearms be stamped out as a hideous evil on our civilization.

If the American people could really believe that gun control legislation would reduce crime, these opponents assert, all loyal and law observing citizens would be the first to fall in line and support such legislation. These loyal Americans, whose highest obligation is to their country, believe, however, that such moves are gravely misdirected, and would not only be ineffective, but actually harmful to the nation. The basic problem in America is one of crime and violence--not firearms. Insofar as firearms are concerned, the problem is not that too many good and decent Americans own guns, but that increasing numbers of lawless individuals in our all too lax and permissive society commit crimes with guns. But, are guns committing the crimes? No--they are not! The thinking behind gun control legislation shifts the blame for wrong-doing from humans who flagrantly violate the law to an inanimate object--the firearm. As stated by the National Rifle Association, "Guns don't kill people, people kill people."

One of the principle arguments made by opponents of gun control is an absurd claim that guns are the only way a man can protect his family and home effectively. However, authorities agree that there are many times more accidental deaths due to guns in private homes than there have been instances of self protection. As an example (Time, June 21, 1968), a Detroit man awakened in the middle of the night when he heard footsteps in his house. When he saw the knob on his bedroom door open slowly, he reached for his bedside pistol, leveled it and fired; fatally shooting his three year old daughter through the head.

The experts also agree that the mere presence of a gun in the home can lead to tragedy, as in the case of petty family squabbles. When people have guns, these experts assert, they use them. A wife gets mad at her husband, and instead of throwing a dish at him, she grabs the readily available firearm and shoots him. J. Edgar Hoover, Director of the F. B. I., emphasizes the point with his statement: "A review of the motives for murder suggests that a readily accessible gun enables the perpetrator to kill on impulse." Impulse--not planned murder, but a violent and emotional act resulting in death.

Another argument likens gun registration to car registration. Few Americans own more than one or two cars, but many own quite a number of

guns since there are as many varieties of sporting arms as there are golf clubs. Would registration fees force many good and law abiding citizens to dump their guns for economic reasons. If so, these fees would hardly stop the flow of guns among criminals--it might possibly increase their availability. Registration fee systems are too often very deceitful. New York City's pistol registration, which was once free, is now \$20 per gun. Fees, like other taxes unfortunately have a way of climbing constantly. And, taxation can readily amount to confiscation if one cannot afford to pay.

Carrying the analogy between gun registration and car registration further, it is an obvious and blatant fact that even though cars are registered and their drivers licensed, the slaughter on American highways has increased yearly in tremendous proportions. Neither registration, licensing or driver training programs have decreased this horrible and senseless loss of life. Cars don't kill people, people kill people.

Gun licensing also brings up one of the strongest arguments against gun control. Many of its opponents firmly believe that gun legislation is a communist plot to disarm America. According to many Hungarians who fled to this country after the 1957 tragedy, this was the way the communists took over Hungary. First came gun registration, then confiscation through high taxes, and then complete confiscation. Looking around at the bumper stickers on many cars today, one sees "The Checzs Registered Their Guns, Too."

The United States has the dubious honor around the world of being the most lawless nation on earth. From 1960 through 1967, this nation's crime rate increased a startling 48%--five times faster than its population! In 1967 alone, 60% of the murders in this country (6,500 out of 10,920) were committed by guns. By contrast, only 2-1/2 % (37 out of 1,469) of the murders in Japan were committed with guns, and of the 309 persons murdered in England, only 29 or 10% were killed by guns. Both of these two countries have rigorous gun control laws. It is also worthwhile to note that while the population of the United States is four times that of England, the murder rate is 217 times as high.

The advocates of gun registration and other restrictions have admitted repeatedly that they have no idea how effective their proposals may be. However, there are some strong indications which they apparently choose to ignore. In New York City, where registration of hand guns has been required for several years, the murder rate recently increased "only" 14%. The New York Times reported (in an article conveniently buried in the back of their paper) that the overwhelming majority of these killings were committed with knives, not guns. The point is obvious--guns or no guns, New York City has more murders than ever. It is also reported that in that city there is a brisk "black market" of guns sponsored by the Mafia. Who would register guns, the law abiding or the lawless?

Following the "mail order murder" of his brother, the late Sen.

Robert F. Kennedy summarized the pro gun control position before the Senate Subcommittee on Juvenile Delinquency when he stated: "The time for enactment of legislation is now. It would save hundreds of lives in this country, and spare thousands of families the grief and heart-break that may come from the loss of a husband, a son, a brother, or a friend. It is past time that we wipe out this stain of violence from our land."

But Harold Glassen, president of the National Rifle Association, in opposition to gun control legislation, has said: "The purpose of gun legislation is to penalize the criminal misuse of firearms and weapons, and not the firearms themselves. This is a sound and reasonable basis for regulation, and is aimed in the right direction--that of criminal conduct when armed. Registration will not keep the criminal from getting guns. It is the honest, law abiding citizen who will suffer from registration and licensing, not the criminal. If America is to remain healthy, let us concentrate our efforts on prosecuting the undesirable classes who cause crime, and not the good people of this country."

Moderate Communication

Gun Control Legislation
The Pros and ConsLawrence A. Rudin
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Ever since the assassination of President John F. Kennedy, the health of the American society and the right of some 200 million Americans to own and use guns is being questioned. Many Americans are advocating gun control legislation, while others oppose it. Why does this disagreement exist? The following are some of the thoughts, for and against, gun control legislation.

From the beginning of this century, guns have brought death to approximately 800,000 Americans--while only 630,768 have been killed in this nation's wars. One source claims that by 1967, fatal shootings reached a high of 20,000--55 per day, or one every 2-1/2 hours. One estimate is that there are between 50 and 200 million privately owned guns in this country today. The Gallup Poll indicates that every other American household has at least one gun.

There are many examples of killings with firearms. In Gunnison, Colorado, Robert Dulaney's two sons were accidentally killed by a hunter who mistook them for an elk. In Oklahoma, two brothers were recently charged with shooting a 49 year old grocer. Then there was Charles Whitman, the University of Texas sniper who killed or wounded 46 people two years ago. Add to these incidents the fact that four of our presidents have been assassinated, plus Sen. Robert F. Kennedy and the Rev. Martin Luther King. The question which must be asked, of course, is whether or not registration of firearms and a ban on mail order sales of firearms will alleviate this situation.

Those who oppose gun control legislation think that this type of legislation shows a lack of faith in the good intentions of the American people by a few Congressmen and a few anti-gun extremists who feel that all private ownership of firearms should be abolished.

These opponents of firearms think that if the American people believed that gun control legislation would reduce crime, all law observing citizens would support this type of legislation. Many Americans, however, believe that such moves are misdirected, and might be ineffective or possibly harmful to the nation.

The basic problem is one of crime--not firearms. Insofar as firearms are concerned, the problem is not that too many Americans own guns,

but that increasing numbers of criminals in American society commit crimes with guns. Gun legislation proponents believe that registration of guns will reduce crime. But, it is not firearms that are committing the crimes. The thinking behind gun control legislation shifts the blame for lawless behavior from human law violators to an object--the firearm. As the National Rifle Association has said: "Guns don't kill people, people kill people."

A few authorities seem to believe that there are more accidents due to guns lying around the house than there are instances of self protection, which is the alleged purpose of these guns. As an example (Time, June 21, 1968), a Detroit man heard a noise in his house one night, and accidentally shot his three year old daughter.

Some experts also think that just having a gun around the house can cause trouble, as in the case of family squabbles. A wife may get mad at her husband, and shoot him instead of throwing a dish at him. F. B. I. Director J. Edgar Hoover seems to agree with this line of reasoning in his statement: "A review of the motives for murder suggests that a readily available gun enables the perpetrator to kill on impulse."

An analogy has been drawn between gun registration and car registration. While few Americans own more than one or two cars, many own several guns, as there are as many varieties of sporting arms as there are golf clubs. Gun control opponents wonder if registration fees will arbitrarily compel gun owners to sell their guns for economic reasons. If so, this would not necessarily reduce gun traffic among criminals. Registration fee systems sometimes have hidden problems associated with them. New York City's pistol registration has risen from "no charge" to \$20.

This analogy between car registration and gun registration can be carried a little further. Even though cars are registered and licensed, automobile accidents have risen each year. Thus, registered cars and their licensed drivers have not had a reducing effect on automobile accidents.

The United States has the dubious but incorrect honor of being the most lawless nation on earth. It has been reported that since 1960, the nation's crime rate has increased 48%. This is about five times faster than the population growth. One statistical analysis shows that in 1967, 6,500 of the 10,920 homicides in this country were committed by firearms. The same analysis indicates that of the 1,469 homicides in Japan, 37 were by firearms; and of the 309 homicides in England, 29 were by firearms. The source also adds that the United States is only four times as large as England, not 217.

The advocates of gun registration and other restrictions have admitted that they are not sure how effective their proposals may be, but there appear to be some indications.

In New York City, where registration of handguns has been required for a number of years, the homicide rate, according to a recent source, has shown an increase of 14%. The New York Times has reported (in the back pages of their paper) that most of the homicides were committed with knives. The point here is that the crime rate still rises in New York City even though guns are registered.

After the death of his brother, the late Robert F. Kennedy summarized the pro gun control position before the Senate Subcommittee on Juvenile Delinquency when he stated: "The time for enactment of legislation is now. It would save hundreds of lives in this century, and spare thousands of families the grief and heartbreak that may come from the loss of a husband, a son, a brother, or a friend. It is past time that we wipe out this stain of violence from our land."

But, Harold Glassen, president of the National Rifle Association, in opposition to gun control legislation, has said: "The purpose of gun legislation is to penalize the criminal misuse of firearms and weapons, and not the firearms themselves. This is a sound and reasonable basis for regulation, and is aimed in the right direction--that of criminal conduct when armed. Registration will not keep the criminal from getting guns. It is the honest, law abiding citizen who will suffer from registration and licensing, not the criminal. If America is to remain healthy, let us concentrate our efforts on prosecuting the undesirable classes who cause crime, and not the good people of this country."

APPENDIX C

COMMUNICATIONS FOR MAIN EXPERIMENT

Extreme Communication

Gun Control Legislation The Pros and Cons

Dr. Richard A. Simms
Center for Social Research
Washington, D. C.

Ever since the wanton slaying of President John F. Kennedy, the mental health of the American society and the long accepted "right" of some 200 million Americans to own and use guns are being severally questioned. Strong demands for gun control legislation are being made by a great many American people. However, other Americans definitely oppose any legislation to control guns. Why does this disagreement between members of one nation exist? The following are the main points given by both advocates and opponents of gun control legislation.

From the beginning of this century, 170,000 more Americans have been needlessly killed in this country by guns than have been fatally wounded in all the wars in America's history. By 1967, death by guns reached a paramount of more than 20,000 per year--an astonishing 55 per day or 2-1/2 killings every hour. Today the United States is virtually an armed camp with an estimated 200 million privately owned guns readily available for murder at the slightest provocation. The Gallup Poll shows that every other American household has at least one gun!

There are a multitude of senseless and horrible deaths due to guns. In Gunnison, Colorado, Robert Dulaney and his two sons were riding down a dirt road on their motorcycles. Dulaney heard a shot, turned and saw his 15 and 10 year old boys fall to the ground dead. Down the road, Dulaney found a middle-aged hunter with a .30-'06 rifle. The hunter was sorry, explaining that he had mistaken the boys (who were wearing red hats and riding a red motorcycle) for an elk. No one can forget Charles Whitman--the Texas sniper--who brutally murdered 14 people and wounded

32 others from a tower on the University of Texas campus. Also four of the 37 presidents of the United States have fallen to the merciless bullet of an assassin--not to mention the vicious slaughter of Senator Robert F. Kennedy and the Reverend Martin Luther King.

Opponents of gun control legislation, on the other hand, rigorously argue that this type of legislation shows a morale-crushing lack of faith in the integrity and good intentions of the American people by some Congressmen and anti-gun extremists who are demanding that all private ownership of firearms be stamped out as a hideous evil of our civilization.

If the American people could really believe that gun control legislation would reduce crime, these opponents assert, all loyal and law observing citizens would be the first to fall in line and support such legislation. These loyal Americans, whose highest obligation is to their country, believe, however, that such moves are gravely misdirected, and would not only be ineffective, but actually harmful to the nation. Insofar as firearms are concerned, the problem is not that too many good and decent Americans own guns, but that increasing numbers of lawless individuals in our all too lax and permissive society commit murders with guns. But, are guns committing these murders? No--they are not! The thinking behind gun control legislation shifts the blame for wrong-doing from humans who flagrantly violate the law to an inanimate object--the firearm. As stated by the National Rifle Association, "Guns don't kill people, people kill people."

One of the principal arguments made by opponents of gun control is a claim that guns are the only way a man can protect his family and home effectively. However, authorities agree that there are many times more accidental deaths due to guns in private homes than there have been instances of self-protection. As an example (Time, June 21, 1968) a Detroit man heard footsteps in his house in the middle of the night and seeing his bedroom doorknob slowly turn, reached for his bedside pistol, leveled it and fired; fatally shooting his three year old daughter through the head.

The experts also agree that the mere presence of a gun in a home can lead to tragedy, as in the case of petty family squabbles. When people have guns, these experts assert, they use them. A wife gets mad at her husband, and instead of throwing a dish at him, she grabs the readily available firearm and shoots him. J. Edgar Hoover, Director of the F. B. I. emphasizes the point with his statement: "A review of the motives for murder suggests that a readily accessible gun enables the perpetrator to kill on impulse." Impulse, not planned murder, but a violent and emotional act resulting in death.

Another argument likens gun registration to car registration. Few Americans own more than one or two cars, but many own quite a number of guns since there are as many varieties of sporting arms as there are golf clubs. Would registration fees force many good and law abiding citizens to dump their guns for economic reasons? If so, these fees

would hardly stop the flow of guns among criminals--it might possibly increase their availability. Registration fee systems are too often very deceitful. New York City's pistol registration, which was once free, is now \$20 per gun. Fees, like other taxes unfortunately have a way of climbing constantly. And, taxation can readily amount to confiscation if one cannot afford to pay. Also, going farther, it is an obvious and blatant fact that even though cars are registered and their drivers licensed, the slaughter on American highways has increased yearly in tremendous proportions. Cars don't kill people, people kill people.

Gun licensing also brings up one of the strongest arguments against gun control. Most of its opponents firmly believe that gun legislation is a communist plot to disarm America. According to many Hungarians who fled to this country after the 1957 tragedy, this was the way the communists took over Hungary. First came gun registration, then confiscation through high taxes and then complete confiscation. Similar references can be made to Czechoslovakia.

The United States has the dubious honor around the world of being the most lawless nation on earth. From 1960 through 1967, this nation's crime rate increased a startling 48%--five times faster than its population! In 1967 alone, 60% of the murders in this country (6,500 out of 10,920) were committed by guns. By contrast, only 2-1/2% (37 out of 1,469) of the murders in Japan were committed by guns, and of the 309 persons murdered in England, only 29 or 10% were killed by guns. Both of these countries have rigorous gun control laws. It is also worthwhile to note that while the population of the United States is four times that of England, the murder rate is 217 times as high.

The advocates of gun registration and other restrictions have admitted repeatedly that they have no idea how effective their proposals may be. However, there are some strong indications which they apparently choose to ignore. In New York City, where registration of hand guns has been required for several years, the murder rate recently increased "only" 14%. The New York Times reported (in an article conveniently buried in the back of their paper) that the overwhelming majority of these killings were committed with knives, not guns. The point is obvious--guns or no guns, New York City has more murders than ever. It is also reported that in that city there is a brisk "black market" of guns sponsored by the Mafia. Who would register guns, the law abiding or the lawless?

Following the "mail order murder" of his brother, the late Senator Robert F. Kennedy summarized the pro gun control position before the Senate Subcommittee on Juvenile Delinquency when he stated: "The time for enactment of legislation is now. It would save hundreds of lives in this country, and spare thousands of families the grief and heartbreak that may come from the loss of a husband, a son, a brother or a friend. It is past time that we wipe out this stain of violence from our land."

But Harold Glassen, president of the National Rifle Association, in opposition to gun control legislation, has said: "The purpose of gun legislation is to penalize the criminal misuse of firearms and weapons, and not the firearms themselves. This is a sound and reasonable basis for regulation, and is aimed in the right direction--that of criminal conduct when armed. Registration will not keep the criminal from getting guns. It is the honest, law abiding citizen who will suffer from registration and licensing, not the criminal. If America is to remain healthy, let us concentrate our efforts on prosecuting the undesirable classes who cause crime, and not the good people of this country."

Moderate Communication

Gun Control Legislation
The Pros and Cons

Dr. Richard A. Simms
Center for Social Research
Washington, D. C.

Ever since the assassination of President John F. Kennedy, the health of the American society and the right of some 200 million Americans to own and use guns is being questioned. Many Americans are advocating gun control legislation, and many Americans are opposed to this type of legislation. Why does this disagreement exist? The following are some of the thoughts for and against, gun control legislation which are being postulated.

From the beginning of this century until present day, guns have brought death to approximately 800,000 Americans, while only about 650,000 have been killed in this nation's wars. One source claims that by 1967, fatal shootings had reached a high of 20,000--55 per day, or two and one-half every hour. One estimate seems to indicate that there are between 50 and 200 million privately owned guns in this country today. The Gallup Poll, in a recent survey, indicated that there appears to be at least one gun in every other American household.

There are many examples of killings with firearms cited by gun control advocates. Some are accidental and some are intentional. The following are some representative examples. In Gunnison, Colorado, Robert Dulaney's two sons who were riding in the country on a motorcycle were accidentally killed by a middle aged hunter who mistook them for an elk. In Oklahoma, two brothers were recently charged with shooting a 49 year old grocer. Then there was Charles Whitman, the University of Texas sniper who killed or wounded a total of 46 people two years ago. Added to these examples is the fact that four of the presidents of this country have been assassinated, plus Senator Robert F. Kennedy and the Reverend Martin Luther King. The question which must be asked, of course, is whether or not registration of firearms and a ban on mail order sales of firearms will alleviate this situation.

Those who oppose gun control measures think that this preventive type of legislation shows a lack of faith in the good intentions of the American people by a few Congressmen and a few anti-gun extremists who feel that all private ownership of firearms should be abolished.

These opponents of firearms legislation think that if the American people could believe that gun control legislation would reduce crime, all law observing citizens would support this type of legislation.

Many Americans, however, believe that such legislation is misdirected, and might be ineffective or possibly harmful to the nation.

The basic problem, these opponents assert, is one of crime, not firearms. Insofar as firearms are concerned, the problem is not that too many Americans own guns, but that increasing numbers of criminals in American society commit crimes with guns. Gun legislation proponents believe that registration of guns will reduce crime. But, it is not firearms that are committing the crimes. The thinking behind gun control legislation shifts the blame for lawless behavior from human law violators to an inanimate object, the firearm. As the National Rifle Association has said: "Guns don't kill people, people kill people."

But what about accidental deaths due to firearms? The alleged purpose of the presence of most guns in American households as stated by gun control opponents is the protection of family and property. A few authorities seem to believe that there are more accidents due to these guns lying around the house than there are instances of self protection. As an example (Time, June 21, 1968) a Detroit man heard a noise in his house one night and accidentally shot his three year old daughter. These authorities also think that people who try to protect their homes from burglars have a better chance of being shot than the intruders.

Some experts also think that the presence of a gun around the house can cause trouble, as in the case of family squabbles. A wife may get mad at her husband and shoot him instead of throwing a rolling pin at him. F. B. I. Director J. Edgar Hoover seems to agree with this line of reasoning--in his statement "A review of the motives for murder suggests that a readily available gun enables the perpetrator to kill on impulse."

Some gun control opponents have drawn an analogy between gun registration and car registration. While few Americans own more than one or two cars, many Americans own several guns, as there are as many varieties of sporting arms as there are golf clubs. These gun control opponents wonder if registration fees will arbitrarily compel gun owners to sell their guns for economic reasons. If so, this would not necessarily reduce gun traffic among criminals. It might reduce gun traffic among non-criminals, and even increase the availability of guns to criminals. Registration fee systems sometimes have hidden problems associated with them. New York City's pistol registration fee has risen from "no charge" to \$20. As has happened in other countries, opponents charge, taxation can eventually lead to confiscation.

This analogy between car registration and gun registration is usually carried a little further. Even though cars are registered and licensed, automobile accidents have risen each year. Thus, simply registering cars and licensing their drivers has not had a reducing effect on automobile accidents.

The United States has the dubious but incorrect honor of being the most lawless nation on earth. (Actually there are several countries whose crime rate is greater than that of the United States.) It has been reported that since 1960 this nation's crime rate has increased about 48%. This is about five times faster than the population growth. One statistical analysis shows that in 1967, 6,500 of the 10,920 homicides in this country were committed by firearms. The same analysis indicates that of the 1,469 homicides in Japan, 37 were by firearms; and of the 309 homicides in England, 29 were by firearms. The source also adds that the United States is only four times as large as England, while the homicide rate is 217 times as high.

The advocates of gun registration and other restrictions have admitted that they are not sure how effective their proposals may be in the prevention of firearm incidents. Opponents, however, think that there appear to be some indications as to the effectiveness of gun control legislation. In New York City, where registration of handguns has been required for several years, the homicide rate, according to a recent source, has shown an increase of 14%. The New York Times reported (in the back pages of their paper) that most of the homicides have been committed with knives. The point here is that the crime rate still rises in New York City even though guns are registered.

In summary, the problem of gun control legislation boils down to crime and accidental deaths due to firearms. Opponents of gun control legislation maintain that the problem is the criminal misuse of firearms--that criminals would not adhere to gun control legislation and that only the good Americans will be penalized by this legislation. On the other hand, while admitting that they are not sure how effective gun control legislation will be, gun control proponents do feel that gun control legislation will reduce the criminal use of firearms through use of stiff penalties, and will also reduce the number of accidental deaths. They support this assumption by looking at successful legislation in England and Japan.

After the death of his brother, the late Robert F. Kennedy summarized the pro gun control position before the Senate Subcommittee on Juvenile Delinquency when he stated: "The time for enactment of legislation is now. It would save hundreds of lives in this country, and spare thousands of families the grief and heartbreak that may come from the loss of a husband, a son, a brother or a friend. It is past time that we wipe out this stain of violence from our land.

But, Harold Glassen, president of the National Rifle Association in opposition to gun control legislation, has said: "The purpose of gun legislation is to penalize the criminal misuse of firearms and weapons, and not the firearms themselves. This is a sound and reasonable basis for regulation, and is aimed in the right direction--that of criminal conduct when armed. Registration will not keep the criminal from getting guns. It is the honest, law abiding citizen who will suffer from registration and licensing, not the criminal. If America is to remain healthy, let us concentrate our efforts on prosecuting the undesirable classes who cause crime, and not the good people of this country."

APPENDIX D

PRETEST MEASURES FOR MAIN EXPERIMENT

SUBJECT DATA SHEET

Classification: FR. SOPH. JUN. SR. (circle one) Other_____

Major:_____ Sex: M F (circle one)

Occupation: Student Military (circle one) Other_____

Age:_____ (to nearest year)

How interested are you in participating?

Not at all_____ Slightly_____ Very_____ Extremely_____

Social Judgment Scale for Issue of Gun Control Legislation

Below are some statements expressing various positions on the issue of gun control legislation.

1. Please read all the statements carefully first before making any marks on this page.

2. Now that you have carefully read all the statements, underline that one statement that comes closest to your stand on this issue.

- A. Gun control legislation is absolutely desirable for the welfare of the nation and its people.
- B. Gun control legislation is extremely desirable for the welfare of the nation and its people.
- C. Gun control legislation is probably desirable for the welfare of the nation and its people.
- D. Gun control legislation seems somewhat desirable for the welfare of the nation and its people.
- E. It is hard to decide whether gun control legislation is desirable or undesirable for the welfare of the nation and its people.
- F. Gun control legislation seems somewhat undesirable for the welfare of the nation and its people.
- G. Gun control legislation is probably undesirable for the welfare of the nation and its people.
- H. Gun control legislation is extremely undesirable for the welfare of the nation and its people.
- I. Gun control legislation is absolutely undesirable for the welfare of the nation and its people.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

The statements below are the same as the ones on the preceding page. Please go through the statements and circle the letter in front of any other statement or statements which are also acceptable to you.

- A. Gun control legislation is absolutely desirable for the welfare of the nation and its people.
- B. Gun control legislation is extremely desirable for the welfare of the nation and its people.
- C. Gun control legislation is probably desirable for the welfare of the nation and its people.
- D. Gun control legislation seems somewhat desirable for the welfare of the nation and its people.
- E. It is hard to decide whether gun control legislation is desirable or undesirable for the welfare of the nation and its people.
- F. Gun control legislation seems somewhat undesirable for the welfare of the nation and its people.
- G. Gun control legislation is probably undesirable for the welfare of the nation and its people.
- H. Gun control legislation is extremely undesirable for the welfare of the nation and its people.
- I. Gun control legislation is absolutely undesirable for the welfare of the nation and its people.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

The statements below are the same as those on the preceding pages.

1. Please read all the statements again before making any marks on this page.
 2. Now that you have read the statements again, cross out that one statement which is most objectionable to you from your point of view.
-
- A. Gun control legislation is absolutely desirable for the welfare of the nation and its people.
 - B. Gun control legislation is extremely desirable for the welfare of the nation and its people.
 - C. Gun control legislation is probably desirable for the welfare of the nation and its people.
 - D. Gun control legislation seems somewhat desirable for the welfare of the nation and its people.
 - E. It is hard to decide whether gun control legislation is desirable or undesirable for the welfare of the nation and its people.
 - F. Gun control legislation seems somewhat undesirable for the welfare of the nation and its people.
 - G. Gun control legislation is probably undesirable for the welfare of the nation and its people.
 - H. Gun control legislation is extremely undesirable for the welfare of the nation and its people.
 - I. Gun control legislation is absolutely undesirable for the welfare of the nation and its people.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Now go through these statements and mark an X through the letter in front of any other statement or statements that are also objectionable to you.

- A. Gun control legislation is absolutely desirable for the welfare of the nation and its people.
- B. Gun control legislation is extremely desirable for the welfare of the nation and its people.
- C. Gun control legislation is probably desirable for the welfare of the nation and its people.
- D. Gun control legislation seems somewhat desirable for the welfare of the nation and its people.
- E. It is hard to decide whether gun control legislation is desirable or undesirable for the welfare of the nation and its people.
- F. Gun control legislation seems somewhat undesirable for the welfare of the nation and its people.
- G. Gun control legislation is probably undesirable for the welfare of the nation and its people.
- H. Gun control legislation is extremely undesirable for the welfare of the nation and its people.
- I. Gun control legislation is absolutely undesirable for the welfare of the nation and its people.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

APPENDIX E

ADDITIONAL POSTTEST MEASURES FOR EXPERIMENTAL SUBJECTS IN MAIN EXPERIMENT

Communication Evaluation Scale

- A. Gun control legislation is absolutely desirable for the welfare of the nation and its people.
- B. Gun control legislation is extremely desirable for the welfare of the nation and its people.
- C. Gun control legislation is probably desirable for the welfare of the nation and its people.
- D. Gun control legislation seems somewhat desirable for the welfare of the nation and its people.
- E. It is hard to decide whether gun control legislation is desirable or undesirable for the welfare of the nation and its people.
- F. Gun control legislation seems somewhat undesirable for the welfare of the nation and its people.
- G. Gun control legislation is probably undesirable for the welfare of the nation and its people.
- H. Gun control legislation is extremely undesirable for the welfare of the nation and its people.
- I. Gun control legislation is absolutely undesirable for the welfare of the nation and its people.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Rating Scales for Author and Communication

Listed below are a number of questions referring to Dr. Simms and the article that you have just read. Put a circle around the number which you think best categorizes Dr. Simms or the article.

How intelligent is the author?

Not at all
Intelligent 1 2 3 4 5 6 7 8 9 Extremely
Intelligent

To what extent does he appear to be an expert in his field?

Not at all
Expert 1 2 3 4 5 6 7 8 9 Extremely
Expert

Was the article biased in the opinions it expressed?

Not at all
Biased 1 2 3 4 5 6 7 8 9 Extremely
Biased

Were the arguments presented in the article factual?

Not at all
Factual 1 2 3 4 5 6 7 8 9 Extremely
Factual

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Perceived Purpose and Trickery Questionnaire

We are interested in knowing what you believed to be the purpose of this experiment. What do think the experimenter was interested in? Please write your answer in the box below.

Did you suspect any trickery; in other words did you at any point think that the experimenter was trying to deceive you in any way? If so, please describe in the box below. If not, simply write "no."

APPENDIX F

ORIGINAL OBSERVATIONS (MAIN EXPERIMENT)

Key to Original Observations

Column Number	Variable Identification
4-6	Subject number
9	Classification 1 - Freshman 2 - Sophomore 3 - Junior 4 - Senior
10-11	Major (see page 135)
12	Sex 1 - Male 2 - Female
13	Occupation 1 - Student 2 - Military 3 - Other 4 - 1/2 student, 1/2 work
14-15	Age
16	Interest 1 - Not at all 2 - Slightly 3 - Very 4 - Extremely
19	Experimenter 1 - Rudin 2 - Colee 3 - Traub
20-21	Class number
22	Communication 1 - Extreme 2 - Moderate 3 - Control
26	Most acceptable position (pretest)
27	Region of acceptance (pretest)
28	Most objectionable position (pretest)
29	Region of rejection (pretest)

Column Number	Variable Identification
30	Region of noncommitment (pretest)
33	Most acceptable position (posttest)
34	Region of acceptance (posttest)
35	Most objectionable position (posttest)
36	Region of rejection (posttest)
37	Region of noncommitment (posttest)
40-41	Change in most acceptable position
42-43	Change in region of acceptance
44-45	Change in most objectionable position
46-47	Change in region of rejection
48-49	Change in region of noncommitment
52	Perceived position of communication
55	Intelligence of author
56	Expertness of author
57	Bias of article
58	Factual base of article
61	Purpose of experiment
	1 - same
	2 - other
62	Perceived trickery 1 - none 2 - yes

Key to Majors Identification

Code Number	Identification of Majors
01	Accounting
02	Business and Economics
03	Secretarial Science
04	Education
05	Health and Physical Education
06	Art
07	Band
08	Choir
09	English
10	Foreign Languages
11	Government
12	History
13	Journalism
14	Music
15	Psychology
16	Sociology
17	Speech
18	Biology
19	Chemistry
20	Geology
21	Mathematics
22	Nursing
23	Physics
24	Agriculture
25	Engineering
26	Ministry
27	Pre-law
28	Architecture
29	Pre-denistry
30	Medical Technology
31	Physical Therapy
32	Pre-veterinary
33	Pre-medicine
34	Archeology
35	Library Science
36	Mechanical Engineering
50	NONE

ORIGINAL OBSERVATIONS
MAIN EXPERIMENT

001	10421184	3011	63833	63542	0 0-3 1-1	4	6388	11
002	10421193	3011	42825	62125	2 0-7 0 0	8	6545	1
003	41224352	3011	34941	33942	0-1 0 0 1	5	8919	11
004	10421183	3011	24850	14950	-1 0 1 0 0	5	7787	11
005	11821192	3011	52125	42125	-1 0 0 0 0	5	7919	11
006	10421194	3011	32134	32943	0 0 8 1-1	5	9819	11
007	10421293	3011	12925	12925	0 0 0 0 0	1	8769	22
008	12511182	3011	32225	32225	0 0 0 0 0	4	7757	11
009	10211202	3011	42925	52925	1 0 0 0 0	6	8829	11
010	10421192	3011	31926	22925	-1 1 0 0-1	2	7728	11
011	10211182	3011	53124	73133	2 0 0 1-1	3	6847	12
012	12513213	3011	62125	62125	0 0 0 0 0	5	8888	11
013	20111202	3011	52143	62152	1 0 0 1-1	5	8829	11
014	12711194	3012	12934	12934	0 0 0 0 0	5	7728	11
015	11421193	3012	41817	42525	0 1-3 1-2	2	7889	11
016	11811183	3012	22925	13924	-1 1 0 0-1	5	7519	12
017	10423282	3012	32934	33933	0 1 0 0-1	7	7748	11
018	15013313	3012	62134	62934	0 0 8 0 0	2	7729	11
019	11821194	3012	12952	12952	0 0 0 0 0	5	8818	11
020	20421192	3012	63251	74250	1 1 0 0-1	4	7574	12
021	10421273	3012	42925	42925	0 0 0 0 0	4	7547	11
022	10224353	3012	11935	12925	0 1 0-1 0	5	7456	11
023	15014182	3012	52625	33842	-2 1 2 2-3	2	7875	11
024	VOID							
025	12511183	3012	71144	72143	0 1 0 0-1	5	6818	11
026	15011192	3012	42125	42925	0 0 8 0 0	5	6578	11
027	10924192	3012	43124	33933	-1 0 8 1-1	2	7839	11
028	11811214	3012	24950	24950	0 0 0 0 0	4	8819	11
029	10421192	3012	13942	14950	0 1 0 1-2	3	7769	11
030	10211192	3012	14641	14941	0 0 3 0 0	2	9999	11
031	12411223	3012	33942	53133	2 0-8-1 1	5	8758	1
032	10211232	3012	51926	52925	0 1 0 0-1	4	8819	11
033	10211184	1021	52125	72143	2 0 0 2-2	5	7959	11
034	11811193	1021	83142	82143	0-1 0 0 1	3	8599	11
035	20211223	1021	62143	62161	0 0 0 2-2	2	5539	11
036	10321193	1021	12843	53824	4 1 0-2 1	5	8919	11
037	10621192	1021	42125	62134	2 0 0 1-1	6	5667	22
038	13021193	1021	22952	23960	0 1 0 1-2	5	7728	11
039	10211192	1021	62125	83142	2 1 0 2-3	5	6679	11

040	VOID								
041	10211184	1021	63133	63142	0 0 0 1-1	5	9829	11	
042	10111204	1021	21971	21971	0 0 0 0 0	5	8899	11	
043	10111192	1021	43960	53942	1 0 0-2 2	5	6759	11	
044	20521192	1021	32925	42925	1 0 0 0 0	1	6899	11	
045	11911223	1021	92161	92152	0 0 0-1 1	3	7889	12	
046	12511192	1021	62161	53160	-1 1 0 0-1	3	7478	2	
047	11111194	1022	92170	92170	0 0 0 0 0	9	7674	2	
048	10511192	1022	22834	84132	6 2-7 0-2	8	7729	11	
049	12911193	1022	52125	52125	0 0 0 0 0	4	8889	11	
050	1042 183	1022	41926	21944	-2 0 0 2-2	5	7778	11	
051	22511193	1022	52134	83142	3 1 0 1-2	2	8977	11	
052	10421193	1022	73242	93151	2 0-1 1-1	5	9919	11	
053	10621192	1022	42943	42925	0 0 0-2 2	6	6638	11	
054	20611202	1022	12943	12952	0 0 0 1-1	5	7759	11	
055	15021182	1022	13833	23842	1 0 0 1-1	6	6417	11	
056	10213193	1022	42943	32952	-1 0 0 1-1	2	6688	12	
057	10611192	1022	31144	52143	2 1 0 0-1	5	8815	11	
058	10211272	1022	92170	92170	0 0 0 0 0	5	7595	11	
059	11111184	1022	32143	33142	0 1 0 0-1	2	8389	1	
060	10521222	1022	22125	53124	3 1 0 0-1	5	5425	12	
061	10421183	1022	22925	12925	-1 0 0 0 0	4	7568	11	
062	20211224	2033	52225	94141	4 2-1 2-4			12	
063	20421244	2033	52952	72134	2 0-8-2 2			11	
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065	10211203	2033	73124	82125	1-1 0 0 1			21	
066	10111193	2033	42243	43251	0 1 0 1-2			11	
067	20423303	2033	53924	62125	1-1-8 0 1			21	
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069	10611192	2033	22834	52934	3 0 1 0 0			12	
070	10211193	2033	42952	42961	0 0 0 1-1			11	
071	10211193	2033	32943	33951	0 1 0 1-2			11	
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073	12811192	2033	43115	42134	0-1 0 2-1			11	
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076	11211184	2033	41144	42925	0 1 8-2 1			21	
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078	10921194	2033	64132	53133	-1-1 0 0 1			12	
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081	10423322	3041	74141	83151	1-1 0 1 0	8	9919	11	
082	10421203	3041	24941	24941	0 0 0 0 0	5	7849	11	
083	10511192	3041	92125	92125	0 0 0 0 0	5	5 57	1	
084	0111192	3041	13933	33951	2 0 0 2-2	5	7546	11	
085	10924173	3041	24941	23942	0-1 0 0 1	5	9828	11	
086	10423312	3041	53951	53924	0 0 0-3 3	1	8188	11	
087	50424383	3041	63142	72143	1-1 0 0 1	5	7915	11	
088	10421193	3041	22952	12961	-1 0 0 1-1	2	8716	11	
089	22511213	3041	43142	43142	0 0 0 0 0	1	8598	11	

090	15011192	3041	72152	72143	0 0 0-1 1	5	3739	11
091	10411203	3041	62143	82125	2 0 0-2 2	5	6359	11
092	10221183	3041	42934	42925	0 0 0-1 1	6	8579	11
093	10421193	3041	45931	45931	0 0 0 0 0	5	8 59	11
094	31211232	3041	42943	42925	0 0 0-2 2	2	8667	11
095	40511254	3042	52152	53142	0 1 0-1 0	5	7514	11
096	10511192	3042	13933	12952	0-1 0 2-1	1	5657	11
097	20423351	3042	52134	52134	0 0 0 0 0	6	7775	11
098	10421292	3042	53924	43942	-1 0 0 2-2	1	8898	11
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100	20621203	3042	63142	64141	0 1 0 0-1	5	9718	21
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103	10421193	3042	52125	42925	-1 0 8 0 0	5	5335	11
104	40521253	3042	42952	12943	-3 0 0-1 1	5	5539	11
105	11021203	3042	32134	33133	0 1 0 0-1	5	7819	11
106	11711193	3042	72125	84141	1 2 0 2-4	5	9957	11
107	10211 3	3042	82152	83160	0 1 0 1-2	5	7735	21
108	11421191	1053	63133	43142	-2 0 0 1-1			11
109	10411193	1053	92125	92125	0 0 0 0 0			22
110	10421192	1053	42934	32934	-1 0 0 0 0			11
111	10421192	1053	32934	32934	0 0 0 0 0			11
112	13111193	1053	63942	63933	0 0 0-1 1			11
113	3042 234	1053	42934	43942	0 1 0 1-2			11
114	20221192	1053	32943	33924	0 1 0-2 1			11
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117	11721202	1053	12843	12834	0 0 0-1 1			12
118	20421192	1053	72143	83142	1 1 0 0-1			11
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120	10211183	1053	91126	91126	0 0 0 0 0			11
121	15014183	1053	73142	73151	0 0 0 1-1			11
122	10924192	1053	62134	42943	-2 0 8 1-1			11
123	10611202	1053	51235	51144	0 0-1 1-1			1
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125	10421183	1053	73233	63142	-1 0-1 1-1			1
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127	13211183	1053	94150	94150	0 0 0 0 0			11
128	10421192	1053	33142	31153	0-2 0 1 1			11
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130	20211202	1053	83133	82143	0-1 0 1 0			11
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133	20211232	1053	53951	53951	0 0 0 0 0			11
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136	21011202	1053	12943	35922	2 3 0-2-1			12
137	10211194	1053	52143	53142	0 1 0 0-1			11
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142	10224182	1053	62143	63142	0 1 0 0-1			11
143	10421182	1053	33942	32952	0-1 0 1 0			11
144	12511183	1053	62925	42925	-2 0 0 0 0			12
145	10224252	1053	32134	52943	2 0 8 1-1			11
146	21721192	1061	12952	42952	3 0 0 0 0	5	7839	11
147	12111182	1061	63142	54141	-1 1 0 0-1	3	8722	22
148	10911222	1061	41117	52116	1 1 0 0-1	4	4519	11
149	10211183	1061	42143	63133	2 1 0-1 0	5	7366	12
150	10321183	1061	52925	32925	-2 0 0 0 0	5	9958	11
151	11821192	1061	53924	62125	1-1-8 0 1	5	7716	1
152	12711193	1061	33942	52943	2-1 0 0 1	2	6458	1
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154	10321193	1061	62152	84150	2 2 0 0-2	9	7919	11
155	21211202	1061	52143	73142	2 1 0 0-1	2	6699	12
156	11811183	1061	52125	42125	-1 0 0 0 0	4	8738	22
157	15013192	1061	74150	74150	0 0 0 0 0	5	5557	11
158	10111193	1061	52134	72134	2 0 0 0 0	6	6727	12
159	21111192	1061	12952	12952	0 0 0 0 0	4	8868	11
160	10911194	1061	12952	22943	1 0 0-1 1	3	7939	11
161	13411193	1062	82234	82234	0 0 0 0 0	5	7723	11
162	10911182	1062	42943	33942	-1 1 0 0-1	5	7558	12
163	VOID							
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165	10111193	1062	32925	23924	-1 1 0 0-1	2	8847	11
166	10211202	1062	92125	92152	0 0 0 3-3	5	9999	11
167	10621192	1062	42152	42152	0 0 0 0 0	5	7748	11
168	10221193	1062	62152	84150	2 2 0 0-2	5	8619	11
169	21711202	1062	51144	51144	0 0 0 0 0	3	5895	12
170	10111192	1062	62152	63133	0 1 0-2 1	5	6357	11
171	15011182	1062	51126	51126	0 0 0 0 0	5	5519	11
172	10421193	1062	22934	22934	0 0 0 0 0	5	9828	11
173	10224183	1062	14841	13842	0-1 0 0 1	5	7919	12
174	22511203	1062	91135	92134	0 1 0 0-1	3	5157	11
175	10421203	2071	21944	23942	0 2 0 0-2	3	8755	11
176	12221193	2071	52134	53133	0 1 0 0-1	3	7685	11
177	10921183	2071	22943	53942	3 1 0 0-1	3	8959	11
178	10521192	2071	94141	94141	0 0 0 0 0	5	9999	11
179	11821193	2071	92270	92152	0 0-1-2 2	3	6798	11
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182	10511193	2071	52143	52143	0 0 0 0 0	3	7967	11
183	10211203	2071	92125	92125	0 0 0 0 0	5	4769	11
184	10911192	2071	32925	32943	0 0 0 2-2	3	7939	11
185	10211182	2071	52925	42134	-1 0-8 1-1	2	7428	12
186	10421223	2071	32952	32961	0 0 0 1-1	5	8969	11
187	10213241	2071	91126	92134	0 1 0 1-2	2	6445	11
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189	50423302	2071	63133	62134	0-1 0 0 1	5	7828	11

190	11111194	2071	41953	41962	0 0 0 1-1	4	7748	11
191	25011203	2071	74141	42134	-3-2 0-1 3	3	8977	11
192	10424303	2071	52125	52143	0 0 0 2-2	3	6639	11
193	13521184	2071	13924	63160	5 0-8 4-4	1	9956	11
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195	20421302	2071	24932	33951	1-1 0 2-1	6	7738	11
196	30421323	2072	84250	94150	1 0-1 0 0	5	7655	11
197	10421193	2072	22952	13960	-1 1 0 1-2	7	7868	11
198	10421192	2072	32943	53124	2 1-8-2 1	7	9919	12
199	30921212	2072	83151	83151	0 0 0 0 0	4	8578	11
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203	20421212	2072	64141	64141	0 0 0 0 0	1	5587	11
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205	10214203	2072	32943	32952	0 0 0 1-1	2	8959	11
206	11211193	2072	92125	92125	0 0 0 0 0	6	8358	11
207	11111223	2072	42134	53933	1 1 8 0-1	4	8375	12
208	10421192	2072	52134	42925	-1 0 8-1 1	5	7859	21
209	10211233	2072	52225	62243	1 0 0 2-2	5	7455	11
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212	10421192	2072	32625	12925	-2 0 3 0 0	1	8789	11
213	10321323	2072	72134	82134	1 0 0 0 0	5	9725	11
214	20212233	2072	22934	22125	0 0-8-1 1	5	8778	1
215	21621214	2072	12952	12943	0 0 0-1 1	3	8819	11
216	10421213	2072	53133	53124	0 0 0-1 1	4	6687	11
217	1042118	3081	54141	54141	0 0 0 0 0	4	8697	22
218	12711194	3081	73124	73142	0 0 0 2-2	4	9767	11
219	11811192	3081	51935	32943	-2 1 0 1-2	1	8998	1
220	10621182	3081	42125	34123	-1 2 0 0-2	5	7719	1
221	10511193	3081	84141	73142	-1-1 0 0 1	5	7768	11
222	10421193	3081	12534	53924	4 1 4-1 0	4	7978	11
223	10421182	3081	42125	42925	0 0 8 0 0	5	8737	12
224	12511183	3081	83142	83142	0 0 0 0 0	5	9858	12
225	30421272	3081	31926	12925	-2 1 0 0-1	3	7519	11
226	11621192	3081	43933	54941	1 1 0 1-2	2	9899	11
227	10421192	3082	23124	23951	0 0 8 3-3	5	8819	11
228	12411182	3082	32934	22934	-1 0 0 0 0	2	8815	11
229	22111252	3082	52125	92125	4 0 0 0 0	5	7555	11
230	12111193	3082	62143	52143	-1 0 0 0 0	4	9578	11
231	10611183	3082	53924	52125	0-1-8 0 1	1	8769	11
232	10921183	3082	42143	43933	0 1 8-1 0	1	7628	11
233	10511204	3082	93151	93151	0 0 0 0 0	5	8649	11
234	11221192	3082	22943	12834	-1 0-1-1 1	2	7536	11
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237	10421202	3082	32943	53142	2 1-8 0-1	5	7538	21
238	10423352	2091	43142	62143	2-1 0 0 1	7	5364	11
239	12714204	2091	53951	33942	-2 0 0-1 1	5	8939	11

240	10511193	2091	52125	44932	-1 2 8 1-3	1	7688	11
241	12111192	2091	42961	43951	0 1 0-1 0	1	8869	1
242	30524392	2092	92143	92143	0 0 0 0 0		5425	11
243	10413394	2092	72125	72143	0 0 0 2-2	5	7599	11
244	11211183	2092	11817	11817	0 0 0 0 0	5	7819	11
245	12511212	2092	32925	52934	2 0 0 1-1	5	8515	11
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248	10111192	2101	62143	83133	2 1 0-1 0		9888	11
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252	21711203	2101	42943	84150	4 2-8 1-3	5	819	12
253	12121183	2101	33951	33942	0 0 0-1 1	6	8729	11
254	31724212	2101	21935	12934	-1 1 0 0-1	3	7518	11
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256	12121183	2101	12843	13942	0 1 1 0-1	4	8849	11
257	20423262	2101	43924	43933	0 0 0 1-1	4	7856	12
258	22213292	2101	91144	91171	0 0 0 3-3	1	5555	11
259	25011204	2101	53933	23942	-3 0 0 1-1	5	8768	21
260	13311193	2101	71135	83133	1 2 0 0-2	5	8729	12
261	12311183	2101	53133	52143	0-1 0 1 0	3	5787	11
262	11821192	2102	74123	74132	0 0 0 1-1	5	7615	11
263	13611193	2102	32725	43924	1 1 2 0-1	6	6748	11
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265	11021202	2102	32925	42925	1 0 0 0 0	5	9856	11
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267	10921192	2102	53142	43142	-1 0 0 0 0	5	9915	11
268	21121203	2102	13942	13951	0 0 0 1-1	5	8849	21
269	13011193	2102	52134	62134	1 0 0 0 0	5	7487	11
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271	30211212	2102	72134	72134	0 0 0 0 0	5	8757	11
272	11111194	2102	73142	63142	-1 0 0 0 0	5	8719	22
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275	12121253	1111	62125	62125	0 0 0 0 0	9	6545	12
276	11821194	1111	92143	92152	0 0 0 1-1	9	7619	2
277	30423312	1111	91553	91553	0 0 0 0 0	6		11
278	12121183	1111	12925	12952	0 0 0 3-3	5	9589	12
279	20521203	1111	62134	63151	0 1 0 2-3	5	9879	11
280	12021193	1111	83151	83151	0 0 0 0 0	5	8979	11
281	30424213	1111	22943	22952	0 0 0 1-1	5	9959	12
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284	10211192	1111	43142	92143	5-1 0 0 1	7	7887	11
285	10111193	1111	32925	62125	3 0-8 0 0	6	9759	11
286	10111253	1111	92161	92161	0 0 0 0 0	1	9951	11
287	12511192	1111	92143	92152	0 0 0 1-1	5	7475	11
288	10921182	1111	32934	53942	2 1 0 1-2	4	7628	11
289	10424323	1112	52143	72143	2 0 0 0 0	8	6766	21

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291	30423403	1112	71135	82134	1 1 0 0-1	7	8889	12
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293	11621182	1112	62243	92252	3 0 0 1-1	9	7859	11
294	10914192	1112	61171	62152	0 1 0-2 1	5	7427	12
295	10424332	1112	22925	22970	0 0 0 5-5	5	8858	11
296	10211193	1112	53133	63133	1 0 0 0 0	5	7525	11
297	11221263	1112	33951	33942	0 0 0-1 1	5	7719	11
298	10111193	1112	91171	91171	0 0 0 0 0	5	8919	11
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304	10214193	3123	92170	92170	0 0 0 0 0			11
305	2051 203	3123	33942	33942	0 0 0 0 0			1
306	11211204	3123	61217	62234	0 1 0 2-3			11
307	11021193	3123	64132	63142	0-1 0 1 0			21
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316	1122 192	3123	33933	43933	1 0 0 0 0			12
317	10421202	3123	52925	42925	-1 0 0 0 0			12
318	10424253	3123	32634	33724	0 1 1-1 0			11
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321	10521193	3123	31144	53142	2 2 0 0-2			11
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323	20423372	3123	42125	52143	1 0 0 2-2			11
324	12112372	3123	92143	92143	0 0 0 0 0			12
325	VOID							
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327	15021192	3123	32925	32925	0 0 0 0 0			1
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329	20421182	3123	23924	24932	0 1 0 1-2			11
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333	11621194	3123	53142	53142	0 0 0 0 0			11
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335	12511192	1131	52143	73142	2 1 0 0-1	5	9859	11
336	10211193	1131	92134	93142	0 1 0 1-2	5	5519	11
337	20211204	1131	74141	73142	0-1 0 0 1	5	6657	21
338	11211193	1131	12943	12943	0 0 0 0 0	4	8869	11
339	10513293	1131	42125	41126	0-1 0 0 1	1	9979	11

340	31411213	1131	32934	23951	-1 1 0 2-3	5	5656	11
341	10421193	1131	42134	43142	0 1 0 1-2	4	7755	11
342	11711194	1131	92143	92143	0 0 0 0 0	7	8769	11
343	10923253	1131	92143	92170	0 0 0 3-3	4	7668	11
344	12121192	1131	52143	52143	0 0 0 0 0	4	8768	11
345	10421193	1131	32925	22934	-1 0 0 1-1	1	7919	11
346	10221193	1131	42925	52925	1 0 0 0 0	5	8719	11
347	12121192	1132	22552	53924	3 1 4-3 2	7	7759	11
348	VOID							
349	10111182	1132	44941	53133	1-1-8-1 2	5	7657	21
350	10411193	1132	14941	14941	0 0 0 0 0	5	8519	1
351	10421192	1132	22952	52143	3 0-8-1 1	5	7989	11
352	30511203	1132	54132	54150	0 0 0 2-2	5	7558	11
353	11411184	1132	53133	25940	-3 2 8 1-3	5	9869	12
354	10321193	1132	51917	52843	0 1-1 3-4	5	7483	11
355	10424223	1132	51917	42925	-1 1 0 1-2	3	9899	11
356	10421193	1132	52934	83133	3 1-8 0-1	5	5516	1
357	10424282	1132	52225	62225	1 0 0 0 0	7	7588	12
358	11511193	2141	61153	62161	0 1 0 1-2	5	7668	22
359	11621192	2141	22943	43933	2 1 0-1 0	5	8899	11
360	VOID							
361	12121193	2141	32934	33942	0 1 0 1-2	7	8779	11
362	20921193	2141	23933	22934	0-1 0 0 1	5	8975	11
363	VOID							
364	30421532	2141	72134	72134	0 0 0 0 0	5	8858	11
365	10121302	2141	53133	53124	0 0 0-1 1	1	8799	11
366	10424193	2141	12561	12961	0 0 4 0 0	4	7959	11
367	10211194	2141	72143	94150	2 2 0 1-3	5	5565	21
368	10321193	2141	53942	63942	1 0 0 0 0	5	7818	11
369	12911193	2141	53160	43951	-1 0 8-1 1	3	7575	11
370	11211213	2141	32125	32125	0 0 0 0 0	3	9458	11
371	10211192	2141	71171	72170	0 1 0 0-1	5	5624	12
372	10211191	2141	91180	91180	0 0 0 0 0	5	99 9	21
373	10221183	2141	22934	33933	1 1 0 0-1	5	7678	11
374	VOID							
375	15011182	2142	64141	84150	2 0 0 1-1	3	7459	22
376	15011192	2142	92143	93142	0 1 0 0-1	6	5458	1
377	21621244	2142	23933	33942	1 0 0 1-1	4	7578	11
378	21911203	2142	61153	63151	0 2 0 0-2	5	5539	12
379	10424253	2142	92125	92134	0 0 0 1-1	2	4443	11
380	1162 182	2142	81135	82543	0 1 4 1-2	1	7217	12
381	40921283	2142	82152	83160	0 1 0 1-2	5	7739	11
382	10421302	2142	71144	81144	1 0 0 0 0	9	8858	1
383	11211202	2142	21917	41935	2 0 0 2-2	5	7829	22
384	10211194	2142	81144	85140	0 4 0 0-4	5	8689	11
385	10421233	2142	43942	43942	0 0 0 0 0	5	9918	11
386	12713293	2142	62425	62125	0 0-3 0 0	5	7617	11
387	10111192	2142	41144	43142	0 2 0 0-2	3	8668	11
388	11711192	2142	51180	52161	0 1 0-2 1	6	6618	11
389	12511194	2142	61153	64141	0 3 0-1-2	1	5286	21

390	10511222	2142	12825	42125	3 0-7 0 0	6	9959	11
391	10421182	2142	43933	43933	0 0 0 0 0	5	6619	11
392	11311221	2142	63142	53142	-1 0 0 0 0	5	7519	12
393	10911192	2142	52134	53124	0 1 0-1 0	5	7869	11
394	21221192	3151	33942	43942	1 0 0 0 0	7	7659	2
395	11921192	3151	73142	63142	-1 0 0 0 0	5	9948	11
396	12121183	3151	32943	42934	1 0 0-1 1	5	7629	11
397	10411194	3151	24941	24950	0 0 0 1-1	5	7755	11
398	11811183	3151	33942	32934	0-1 0-1 2	1	8958	11
399	10921193	3151	34932	33942	0-1 0 1 0	5	6727	11
400	13311182	3151	52925	52925	0 0 0 0 0	3	7637	11
401	10921192	3152	12952	13951	0 1 0 0-1	5	9859	11
402	10921192	3152	32943	33942	0 1 0 0-1	4	7858	11
403	10911192	3152	62152	42143	-2 0 0-1 1	3	8523	12
404	11211194	3152	84141	84141	0 0 0 0 0	5	8629	12
405	22121292	3152	33924	42125	1-1-8 0 1	3	5588	11
406	10921193	3152	23933	33933	1 0 0 0 0	4	7889	11

APPENDIX G

CORRELATION COEFFICIENTS

Key to Variables Used in Correlation Analyses

Variable Number	Variable Description
1	Age
2	Interest
3	Most acceptable position (pretest)
4	Region of acceptance (pretest)
5	Most objectionable position (pretest)
6	Region of rejection (pretest)
7	Region of noncommitment (pretest)
8	Most acceptable position (posttest)
9	Region of acceptance (posttest)
10	Most objectionable position (posttest)
11	Region of rejection (posttest)
12	Region of noncommitment (posttest)
13	Most acceptable position (change)
14	Region of acceptance (change)
15	Most objectionable position (change)
16	Region of rejection (change)
17	Region of noncommitment (change)
18	Perceived position of communication
19	Intelligence of author
20	Expertness of author
21	Bias of article
22	Factual basis of article

CORRELATIONS FROM MAIN EXPERIMENT

VARIABLE X	VARIABLE Y	CORRELATION	P
01	02	-0.0854	0.092
01	03	0.0653	0.197
01	04	-0.0681	0.179
01	05	-0.0259	0.609
01	06	-0.0506	0.318
01	07	0.0773	0.127
01	08	0.0705	0.164
01	09	-0.1717	0.001
01	10	-0.0615	0.225
01	11	-0.0250	0.621
01	12	0.1068	0.035
01	13	-0.0048	0.923
01	14	-0.1183	0.019
01	15	0.0081	0.872
01	16	0.0676	0.182
01	17	0.0827	0.102
01	18	0.0577	0.319
01	19	-0.0195	0.736
01	20	-0.0301	0.604
01	21	0.0125	0.829
01	22	-0.1037	0.072
02	03	0.0210	0.679
02	04	0.0309	0.542
02	05	0.0075	0.882
02	06	0.0852	0.092
02	07	-0.0872	0.085
02	08	-0.0073	0.885
02	09	0.1017	0.044
02	10	0.0081	0.873
02	11	0.1129	0.026
02	12	-0.1423	0.005
02	13	-0.0435	0.390
02	14	0.0749	0.139
02	15	-0.0429	0.397

02	16	0.0100	0.843
02	17	0.0281	0.579
02	18	0.0595	0.304
02	19	0.1258	0.030
02	20	0.0052	0.928
02	21	0.0291	0.615
02	22	0.0439	0.447
03	04	-0.0104	0.836
03	05	-0.7007	0.001
03	06	0.1241	0.014
03	07	-0.0983	0.052
03	08	0.8624	0.001
03	09	-0.0177	0.726
03	10	-0.6633	0.001
03	11	0.1931	0.001
03	12	-0.1470	0.004
03	13	-0.1561	0.002
03	14	-0.0312	0.538
03	15	-0.0424	0.401
03	16	0.0456	0.368
03	17	0.0030	0.952
03	18	0.0653	0.258
03	19	-0.1753	0.002
03	20	-0.2012	0.001
03	21	0.1048	0.069
03	22	-0.2190	0.001
04	05	0.0102	0.839
04	06	0.0431	0.395
04	07	-0.5507	0.001
04	08	-0.0218	0.667
04	09	0.5401	0.001
04	10	-0.0115	0.820
04	11	0.0963	0.057
04	12	-0.3493	0.001
04	13	-0.0157	0.755
04	14	-0.4037	0.001
04	15	-0.0172	0.734
04	16	0.0230	0.650
04	17	0.0540	0.286
04	18	0.0064	0.912
04	19	0.0953	0.099
04	20	0.0858	0.138
04	21	0.0099	0.863
04	22	-0.0028	0.961
05	06	-0.0650	0.199
05	07	0.0490	0.333
05	08	-0.6501	0.001
05	09	-0.0328	0.516

05	10	0.7596	0.001
05	11	-0.1348	0.008
05	12	0.1254	0.013
05	13	-0.0044	0.931
05	14	-0.0365	0.471
05	15	-0.2036	0.001
05	16	-0.0783	0.122
05	17	0.0426	0.400
05	18	-0.0702	0.224
05	19	0.1859	0.001
05	20	0.1940	0.001
05	21	-0.0983	0.088
05	22	0.2286	0.001
06	07	-0.8576	0.001
06	08	0.0989	0.050
06	09	0.0897	0.076
06	10	-0.0705	0.163
06	11	0.6618	0.001
06	12	-0.5795	0.001
06	13	-0.0514	0.310
06	14	0.0262	0.605
06	15	-0.0633	0.211
06	16	-0.3283	0.001
06	17	0.1987	0.001
06	18	0.0724	0.210
06	19	0.0058	0.919
06	20	0.0037	0.949
06	21	0.0063	0.913
06	22	-0.0590	0.306
07	08	-0.0714	0.158
07	09	-0.3529	0.001
07	10	0.0648	0.200
07	11	-0.6025	0.001
07	12	0.6639	0.001
07	13	0.0510	0.313
07	14	0.1859	0.001
07	15	0.0617	0.222
07	16	0.2624	0.001
07	17	-0.1938	0.001
07	18	-0.0641	0.267
07	19	-0.0529	0.361
07	20	-0.0457	0.429
07	21	-0.0102	0.859
07	22	0.0510	0.377
08	09	0.0232	0.646
08	10	-0.7275	0.001
08	11	0.1657	0.001
08	12	-0.1455	0.004

08	13	0.3144	0.001
08	14	0.0460	0.363
08	15	-0.1258	0.013
08	16	0.0581	0.251
08	17	-0.0255	0.614
08	18	0.2081	0.001
08	19	-0.1953	0.001
08	20	-0.1748	0.002
08	21	0.0709	0.219
08	22	-0.2171	0.001
09	10	-0.0109	0.829
09	11	0.1173	0.020
09	12	-0.5974	0.001
09	13	0.1137	0.024
09	14	0.4558	0.001
09	15	-0.0016	0.974
09	16	0.0253	0.616
09	17	-0.1130	0.025
09	18	-0.0014	0.980
09	19	0.1032	0.074
09	20	-0.0309	0.593
09	21	0.0282	0.626
09	22	0.0353	0.541
10	11	-0.1262	0.012
10	12	0.1074	0.033
10	13	-0.1622	0.001
10	14	-0.0046	0.927
10	15	0.2672	0.001
10	16	-0.0571	0.259
10	17	0.0376	0.457
10	18	-0.1565	0.007
10	19	0.1466	0.011
10	20	0.1536	0.008
10	21	-0.0532	0.357
10	22	0.2229	0.001
11	12	-0.8664	0.001
11	13	-0.0374	0.459
11	14	-0.0037	0.941
11	15	-0.0844	0.095
11	16	0.3626	0.001
11	17	-0.1062	0.035
11	18	0.0401	0.487
11	19	0.0110	0.849
11	20	0.0552	0.340
11	21	0.0003	0.995
11	22	-0.0930	0.107
12	13	-0.0269	0.595
12	14	-0.2261	0.001

12	15	0.0690	0.172
12	16	-0.3055	0.001
12	17	0.1426	0.005
12	18	-0.0322	0.578
12	19	-0.0600	0.300
12	20	-0.0302	0.602
12	21	-0.0142	0.806
12	22	0.0587	0.309
13	14	0.1825	0.001
13	15	-0.0806	0.111
13	16	0.0665	0.189
13	17	0.0237	0.640
13	18	0.2675	0.001
13	19	-0.0305	0.598
13	20	0.0304	0.600
13	21	-0.0551	0.341
13	22	-0.0336	0.561
14	15	0.0673	0.183
14	16	0.0179	0.723
14	17	-0.1219	0.016
14	18	-0.0031	0.956
14	19	-0.0205	0.723
14	20	-0.1035	0.073
14	21	0.0556	0.336
14	22	0.0328	0.570
15	16	0.0304	0.548
15	17	0.0569	0.260
15	18	-0.0805	0.163
15	19	-0.0457	0.430
15	20	-0.0232	0.688
15	21	0.0735	0.203
15	22	0.0157	0.785
16	17	-0.2859	0.001
16	18	-0.0273	0.637
16	19	-0.0101	0.860
16	20	0.0427	0.460
16	21	-0.0082	0.887
16	22	-0.0297	0.607
17	18	0.0558	0.334
17	19	-0.0726	0.210
17	20	-0.1121	0.052
17	21	0.0707	0.221
17	22	-0.0312	0.589
18	19	0.0148	0.798
18	20	0.0324	0.577
18	21	-0.2214	0.001
18	22	0.0657	0.256

19	20	0.5170	0.001
19	21	0.0053	0.927
19	22	0.2919	0.001
20	21	-0.0845	0.145
20	22	0.3316	0.001
21	22	-0.0044	0.939

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