

**A STUDY OF THE EFFECTS OF
DIFFERENTIAL AMOUNTS OF INFORMATION
ON SMALL GROUP CONFLICT**

THESIS

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by

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CHAPTER I

INTRODUCTION

Human groups and associations of all sorts--from the family, clique, clan, and tribe, to the largest religious organizations and states--are often in conflict. "The great majority of citizens from all corners of the United States would most likely agree with the thesis that conflict is bad, dysfunctional to society--and conversely, that peace and harmony are good and the proper state of things."¹ Yet, conflict exists within even the most cohesive and durable groups, and sometimes contributes substantially to their perpetuation. On one hand, conflict may result in the destruction or disruption of all or certain bonds of unity which may have existed previously.² On the other hand, conflict

¹Myron Brenton, "Conflict: Make It Work for You," American Education (A Publication of the Department of H.E.W., January-February 1973), 30.

²Morton Deutsch, "Conflicts: Productive and Destructive," Journal of Social Issues 25 (January 1969), 12. (Hereinafter cited as Deutsch, "Conflicts: Productive and Destructive.")

may strengthen pre-existing ties or form bonds where none existed previously.³

The study of conflict was neglected until the late 1950's and remains a relatively open field for further experimentation and research. Because of the centrality of conflict to the human condition, the search for fuller understanding of its origins, functional dynamics, and consequences is vital to the field. "Conflict is a phenomenon so omnipresent in social life that we tend too easily to take it for granted."⁴ When we examine conflict, however, we see that it is a matter which is susceptible to analysis. One aim of this study was the very practical objective of adding to the knowledge about this topic.

Conflict is an ever-present element of life, just as is the constant flow of information. Both are interrelated. Many researchers indicate that the amount of conflict and its end results depend on the amount of information available. Others in the same area of research do not agree. Studies have shown that the constructive resolution of conflict does not necessarily depend on the amounts of information that are available to the subjects. Still others have discussed the

³Ibid., p. 22.

⁴Robert L. Kahn and Elise Boulding, eds., Power and Conflict in Organizations (New York: Basic Books, Inc., 1964), p. 75.

inherent significance of information on conflict resolution. The path followed by this study was to discover whether or not the amount of information does play a part in the constructive resolution of small group conflict.

Statement of the Problem

The purpose of this study was to find the answers to several questions, among which were:

1. Will a problem-solving discussion produce a greater attitude change of group members toward each other given a purposely inserted element of added information into a discussion than a discussion without this purposely inserted element?
2. Will the addition of information to a problem-solving discussion result in more positive attitudes on the part of group members toward the the discussion process?
3. Will the addition of differential amounts of information increase group cohesion?

For the purpose of this study certain standard definitions should be understood. The term conflict refers to a sharp disagreement or collision of interests, ideas, etc. and emphasizes the process rather than the end.⁵ An attitude

⁵Webster's New World Dictionary, rev. ed. (1970), s.v. "Conflict."

refers to a person's disposition or opinion.⁶ Information will hereafter be known as "knowledge in symbolic or coded form."⁷ Productive conflict will be referred to as conflict in which participants are satisfied with the outcomes of a problem-solving discussion and feel that they have gained as a result of this conflict; "it aims at the resolution of tension between antagonists."⁸ Because the term "productive conflict" used by Mr. Coser is so general, and so easily misinterpreted, this concept will hereafter be presented under the label "constructive conflict." Hopefully, this change of terminology may clear any confusion as to the usage of the element. The definitions discussed above are very basic definitions; exact operational definitions used in this study are provided in Chapter Two.

Significance of the Study

To date, few studies have been performed directly on the effects of differential amounts of information an attitude change in small groups. Common sense might lead one to

⁶Ibid., s.v. "Attitude."

⁷J. K. Zawodny, Man and International Relations, vol. 1: Conflict (San Francisco: Chandler Publishing Company, 1966), p. 215.

⁸Deutsch, "Conflicts: Productive and Destructive," p. 19, quoting [or "citing"] Lewis Coser in Functions of Social Conflict. p. 154.

expect that, given added information in a problem-solving situation, individuals involved will undergo a greater attitude change toward each other and toward the discussion process itself. However, studies related to this matter have produced a controversy as to whether or not this common sense view is correct.

In various studies performed in 1954, Guetzkow and Gyr found that groups that have more expertise available and that utilize the knowledge are those whose conflict ends with more consensus.⁹ Cathcart, in a 1953 study found that when arguments were backed up with specific evidence, they produced more attitude change than the same arguments without the evidence.¹⁰ However, in studies performed by Shaw and Penrod in 1962, results failed to demonstrate a significant improvement in group solutions when extra information was available.¹¹ Research done by Muzafer Sherif indicated that information is often ignored or changed in some manner to fit one's own purposes; that information is ineffective as a means of reducing intragroup conflict.¹²

⁹Harold Guetzkow and J. Gyr, "An Analysis of Conflict in Decision-Making Groups," Human Relations 7 (1954), 375.

¹⁰Barry E. Collins and Harold Guetzkow, A Social Psychology of Group Processes for Decision-Making (New York: John Wiley & Sons, Inc., 1964), p. 39. (Hereafter cited as Collins and Guetzkow, A Social Psychology.)

¹¹Ibid., p. 30

¹²Muzafer Sherif, In Common Predicament: Social Psychology of Intergroup Conflict and Cooperation (Boston: Houghton-Mifflin, 1966), p. 86. (Hereafter cited as Sherif, In Common Predicament.)

Clearly, these studies indicate that work done in this area of conflict resolution is not conclusive. These references also suggest that the use of added information in small group discussions to promote the constructive resolution of existing conflicts is often taken for granted. However, little conclusive experimental evidence on the true value of differential amounts of information in promoting conflict resolution presently exists. For this reason, further studies need to be undertaken to determine whether or not information does play any great part in the constructive resolution of conflict. The goal of this study was to conduct just such an experiment.

Outline of the Thesis

Chapter Two reviews related research and establishes the operational definitions and hypotheses for this study. Chapter Three provides the research approach, the testing procedure to be used, and the measuring techniques used to gather and analyze the data. Chapter Four presents the results of the experiment and discusses them in conjunction with the hypotheses presented in the second chapter. A final chapter summarizes the results, presents conclusions from the study, and makes recommendations for further research in this area.

CHAPTER II

BACKGROUND

A review of related research is presented in this chapter. Also included are the operational definitions and hypotheses which will be used throughout the study.

Review of Related Research

Very little conclusive experimental evidence presently exists regarding the effects of additional information on the constructive outcome of a small group discussion. What is known at this time is a composite of knowledge concerning attitude change and cohesion, which is applied to the effects of informational influence on small groups. Apparently, too much has been taken for granted concerning elements of added information--much of which may be misinterpreted as being simply common sense.

Several related studies have already been discussed in Chapter One. However, examination of other studies reveals the extent of the controversy over the effects of information on small group problem-solving. According to Paul Swingle,

"information should, by its definition, provide for positive change in both private beliefs and behavior."¹ However, group member interaction and the identification of group members with each other must also be considered. Clear predictions cannot be made here. One possibility exists that a group member might provide information which would suggest that another group member should change his behavior. This, in turn, might lead to avoidance of further interaction. Swingle also suggests that if the group member providing information indicates some superiority on his part, other group members might not identify with him as closely as before. They will tend to reject the information he offers. It appears that,

. . . informational influence, while socially independent, is nonetheless dependent on other elements in the influencee's cognitive structure. One cannot influence a person to change his attitudes or behaviors with respect to some object through changing his perception of the relationship between previous attitudes and his more basic values.²

Investigations in social psychology have found that "such change is dependent on both the influencee's holding the assumed basic values, on his not holding stronger values

¹Paul G. Swingle, ed., The Structure of Conflict (New York: Academic Press, 1970), p. 80. (Hereinafter cited as Swingle, The Structure of Conflict.)

²Ibid., p. 99.

which are counter to the change, and on the effectiveness of the informational message."³

In competitive conflict situations, the problem is even more complex, since the distrust which results from discrepant goals may lead to further distrust and greater tendencies among group members to question the veracity of the information. They may also tend to reinterpret it in terms of their own needs, or to avoid communication entirely. A comfortable conventional belief is that conflicts can be resolved if adequate means (in this case, further information) are provided for conflicting parties to discuss their differences. However, considerable experimental evidence suggests that such consequences are by no means inevitable. In many instances, an opportunity for constructive communication of differences may be used for the expression of mutual hostility, with subsequent escalation of conflict.

In 1955, Shevitz found "that a group member who exclusively possesses task-related information attempts to lead more than others and has more status than other group members do."⁴ Shaw and Penrod, in 1962, organized a study of varying amounts of information on the quality of group solutions.⁵

³Ibid.

⁴Collins and Guetzkow, A Social Psychology, p. 39.

⁵Ibid., p. 30.

The experimenters gave all participants the first paragraph of a human relations case. In some experimental conditions, a certain participant was given one or two additional paragraphs of the problem. Although the procedure manipulated the amount of information, the definitions of the problem were also changed. Perhaps because of the fundamental nature of the information, the other group members appeared reluctant to accept the information presented by the informed member. Two separate experiments failed to demonstrate significant improvements in group solutions when a single member was given extra information.⁶ This may lead one to believe that information must be presented in a persuasive manner as well as be legitimately documented before other members in the group are likely to accept it.

Peter Suedfeld found that individuals sought out information reducing dissonance and avoided information increasing it.⁷ Adams in 1961, and Maccoby, Maccoby, Romney, and Adams in studies performed in the same year, showed that people tended to seek information which agreed with their viewpoint; but the same year Rosen obtained results

⁶Ibid.

⁷Peter Suedfeld, ed., Attitude Change: The Competing Views (Chicago: Aldine-Atherton, Inc., 1971), p. 77.

which indicated that people tended to seek information which disagreed with their viewpoint.⁸ By contrast, Feather found in 1962, that people tended to seek out new information whether it was consonant or contrary.⁹

According to Muzafer Sherif, all available "information is subordinate to the existing state of relationships between groups, and actually succeeds in changing this state (of hostility) only when it contains definite evidence of a shift in their relative power."¹⁰ Otherwise, the available research done by Sherif indicates that favorable information is discarded, is redefined to fit one's own purpose, or is simply inoperative as a means of reducing intergroup conflict. Again according to Sherif,

. . . all our reception of incoming information is necessarily selective. . . . there is an external screening process through the family, church, school, government, and other agencies that has great influence on what we are exposed to.¹¹

This selectivity affects the way information is presented as well as the way in which it is received. Apparently, our acceptance of information offered to us "is narrowed to what

⁸Ibid., p. 133.

⁹Ibid.

¹⁰Sherif, In Common Predicament, p. 86.

¹¹Ibid., pp. 130-131.

is relevant and fits readily into our ongoing interests, to the bounds of what we already know or consider acceptable, and to what we expect on the basis of our established attitudes."¹²

Informational influence may be, then, an effective means of achieving change and reducing conflict, since the influence of the information itself rapidly becomes "independent of the influencing agent, and thus does not require reinstatement or surveillance for its effectiveness."¹³

Swingle concludes, however, that for informational influence to be effective, "the content communicated must indeed tie the changed pattern of behavior into an existing cognitive structure and value system."¹⁴ Failure of informational influence often stems from the failure to appreciate the value system of the person upon whom influence is attempted. In accordance with this, "those attempting informational influence also generally overlook bases for noncompliance, such as need for independence, hostility toward the source, and desire for acceptance from other influencing agents."¹⁵

¹²Ibid., p. 130.

¹³Swingle, The Structure of Conflict, p. 73.

¹⁴Ibid.

¹⁵Ibid.

After examination of these related investigations, many facets of this area seem to need further exploration. This experiment was designed to advance the knowledge centered around the effects of information on small group behavior.

Operational Definitions

As the background of related research has shown, much controversy has occurred and few conclusions can be drawn concerning the effects of differential amounts of information on the outcomes of small group conflict. The specific purpose of this study was to determine whether or not the addition of differential amounts of information to a small group discussion would produce what might be termed "constructive conflict."

Certain operational definitions were necessary to follow the course of this study.¹⁶ Those used for this study are as follows:

Conflict: Conflict was introduced by presenting a case study involving a complex policy question to several small discussion groups.

Attitude change: Attitude change was expressed by

¹⁶As defined by Kerlinger: "An operational definition is a definition that assigns meaning to a construct or variable by specifying the activities of the researcher in measuring a variable or manipulating it." See Foundations of Behavioral Research (New York: Holt, Rinehart, & Winston, 1964), p. 64.

comparing pre-test and post-test results on questions via the Likert scales designed to measure the subjects' opinions of the discussion process. A shift toward one on the negative entries and a shift toward seven on the positive entries indicated the effects of further information on attitude change.

Information: Information consisted of a basic data sheet informing the subjects of the problem involved and the roles of conflicting parties involved in the case.

Additional information: Additional information was an extra data sheet given to each group member in the Experimental Condition. This data sheet consisted of a description of specific roles for each individual member. This data sheet was given on the premise that this additional material might forward the constructive resolution of the topic in conflict.

Cohesion: Cohesion was expressed by comparing pre-test and post-test results of a questionnaire using a sociometric scale designed to measure the subjects' identification with each other.

Hypotheses for this Study

Several hypotheses were explored in this study pertaining to two major areas: 1) attitude change, and 2) cohesiveness. Null hypotheses were employed due to the

contradictory nature of previous research. The hypotheses examined were:

Attitude change hypothesis: No difference of opinion toward the discussion process itself between those groups having differential amounts of information and those groups without the added information will occur.

Cohesion hypothesis #1: The inclusion of differential amounts of information in a small group discussion will have no effect in modifying the opinions of group members toward each other.

Cohesion hypothesis #2: The inclusion of additional amounts of information in a small group discussion will produce no more cohesiveness among group members than a discussion without the added information.

Chapter Three of this study will provide further information on the procedures employed in this study.

CHAPTER III

EXPERIMENTAL DESIGN

This chapter describes the research design, the testing procedure, the instruments of measurement, and the techniques used to gather and analyze the data. The discussion is divided into several sections, each representing a portion of the conducted experiment.

Measures

Throughout the stages of past experimental research, various instruments and techniques have been used to gather and analyze data. One of the most widely used and well-established is R. A. Likert's attitude scale method. Another type of measurement, developed more recently than Likert's scaling technique, is the sociometric scaling system used in studies of cohesion. Both of these methods were employed in this study for the collection of data.

Attitude Scales

One measurement device used by investigators in speech communication has been the attitude scale. While the

instrument often resembles the more general rating scale in some respects, an attitude scale serves as a quantification procedure designed to assign numbers to the internal states of the subjects.¹ In other words, a rating scale aids in assigning numbers to an evaluation of a stimulus, while an attitude scale aids in assigning numbers to a feature of a response. Examples of both scales are as follows:

rating scale

The background information given for the discussion was clear and concise.

very clear _____ not very clear

attitude scale

The leader of the group is the person other members like the best.

<u>strongly</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>strongly</u>
agree	agree		disagree	disagree

R. A. Likert developed a method for scoring an attitude scale that was an extension of mental testing procedures used in experimentation.² The items for the scale are selected by preparing a set of statements of opinion that are so extreme that most people will not accept them without some kind of reservation. A scale is applied to each item

¹Ernest Bormann, Theory and Research in the Communicative Arts (New York: Holt, Rinehart, and Winston, Inc., 1965), p. 371.

²Ibid., p. 374.

with intervals from either one to five or from one to seven. The test is then given to a sample of subjects and the answers are analyzed for their consistency with one another and with the entire test.

These types of scales have been widely used in experimental research since their development in 1923. The vast number of studies using these scales has demonstrated the widespread acceptance of this measurement technique. Likert scales were selected for this study because they were likely to offer the best measurement of subjects' attitude changes toward the discussion process as well as any modifications in self attitude.

A pilot study was undertaken to construct a set of Likert scales for this study. The scales were intended to measure each subject's opinion on small group discussion and on his ability to participate in such discussions. Thirty-six statements, each assigned to a graphic scale of seven intervals on a continuum ranging from strongly agree to strongly disagree, were presented in questionnaire form. The statements were designed purposely to elicit responses along the continuum. As a result, some statements were worded favorably toward the attitude object and others were worded unfavorably toward the attitude object. These statements were then randomly placed on the questionnaire. Two examples of these statements follow:

People behave differently as members of a group than they do as individuals.

strongly agree ____: ____: ____: ____: ____: ____: ____: strongly disagree

Small group discussion is boring.

strongly agree ____: ____: ____: ____: ____: ____: ____: strongly disagree

The complete measure for the pilot study appears in Appendix B. Forty-four subjects from Speech 1310, the basic speech course at Southwest Texas State University, were selected for participation in this pilot study. This preliminary investigation was conducted in May of the 1974 Spring Semester. An analysis of subjects' responses was made to determine which statements would be employed in the final draft of the experiment. Correlational coefficients were computed, and those statements found having the highest correlation coefficients were retained. All of the retained statements correlated with the summated response values at + .80 or more. Thirteen of the retained statements were positive and seven were negative. The final draft required an equal number of positive and negative statements. Therefore, three statements were randomly selected to be changed from positive to negative. An example of this kind of modification follows:

Unity is an important characteristic of a small group.

became

Unity is not an important characteristic of a small group.

This resulted in a total of ten positive statements and ten negative statements for use in the final test. The data derived from the pilot project can be found in Table 5 of Appendix D.

Sociometric Scales

Sociometric scales were developed by Jacob L. Moreno as a technique for evaluating the internal social structure of a group.³ The sociometric test, itself, is not really a test, but a technique. Moreno simply called it a test to prevent confusing it with other methods of diagnosis he developed in the area of sociometry.

The study of groups in terms of the interpersonal attractions and repulsions of its members falls within the area of sociometry. Festinger, Schachter, and Back suggest that the "method of measuring such interpersonal relationships has customarily been that of asking each member of the group under study a question which allows expression of

³Norman Gronlund, Sociometry in the Classroom (New York: Harper and Brothers, 1959), p. 1.

preference for particular companions in some sort of activity."⁴ Analysis of the answers to such questions helps to reveal the patterns of social relationships within the group.

Sociometric scales have been used in many studies dealing with cohesion. Usage of these scales has been general, and the question of their validity has been examined many times in past research. This difficulty has led some of the writers of the field, such as Helen Hall Jennings, to state that "sociometric choices have 'face validity' since they are direct measures of the phenomenon under investigation."⁵ Numerous other studies by such persons as Biehler, Bonney, Byrd, and Mouton⁶ have also helped in establishing sociometric scales as a valid measurement technique. Many previous investigations show that sociometric scales have served as a research device that is both flexible and adaptable to research demands in the area of cohesion.⁷

In order to test the proposition that those groups whose members have more information communicate and interact more freely and, thereby, develop a greater amount of

⁴Leon Festinger, Stanley Schachter, and Kurt Back, Social Pressure in Informal Groups (Stanford: Stanford University Press, 1950), p.185.

⁵Merl E. Bonney and Richard S. Hampleman, Personal-Social Evaluation Techniques (New York: The Center for Applied Research in Education, Inc., 1962), p. 70.

⁶Ibid., p. 71.

⁷Kerlinger, Behavioral Research, p. 578.

group cohesion than groups having no added information, an independent expression of attitude or opinion on an issue of common concern to his group and his fellow group members had to be obtained from each group member. Two specific sociometric questions were employed in this study. Question One ("How did you like the group you worked in?") and Question Two ("If you were taking part in another group discussion, how would you like to work with the same people?") were designed to determine such individual attitudes.

The Experimental Format

The problem-solving discussion used in this study was developed by Fred E. Jandt as a simulation set up for an exercise in Interactive Synecology. The original simulation can be found in his book, Conflict Resolution Through Communication.⁸ The exercise was edited especially for this study. The time allowed for the exercise was shortened and differential amounts of information were added to the revised exercise to create the discussion used by the Experimental Group. The Control Group used only a modified form of the General Information Sheet from Jandt's simulation for their problem-solving discussion. This sheet was revised, and certain elements of information were deleted from the original

⁸Fred E. Jandt, ed., Conflict Resolution Through Communication (New York: Harper & Row, Publishers, 1973), pp. 14-21. (For further information on Interactive Synecology see pp. 7-23 of Jandt's book.)

information sheet. This revision was done in an effort to assure that the two groups received genuinely different levels of information.

The Experimental Design

One Experimental Group and one Control Group were employed in this experiment. The 98 subjects who participated in the experiment were randomly selected from four sections of Speech 1310 at Southwest Texas State University during the First Summer Session of 1974. Groups were classified according to room numbers, class period time, instructor, and group type--Control or Experimental. Table 1, below, illustrates this division.

TABLE 1
EXPERIMENTAL DESIGN

Time	Instructor	Room	Status
9:30	Flemming	108	Control
9:30	Abernathy	110	Experimental
11:00	Hambrick	104	Experimental
12:30	Harrell	110	Control

The Control Group entered into a problem-solving discussion with only the basic information sheet available to them. The Experimental Group engaged in a problem-solving

discussion with the basic information sheet and added amounts of information given to each member in the group according to role assigned to him during the discussion.

In the Control Group, forty-seven subjects completed the pre-test and post-test measures. Fifty subjects in the Experimental Group completed both measures; therefore, three randomly selected sets of scores were eliminated to equalize the cells.

Conduct of the Experiment

Experimental Procedures: Administration of the Pre-test

The purpose of the experiment was not revealed to any of the subjects. However, a brief explanation was given by the experimenter immediately after she was introduced to the classes.

Good morning. My name is Bonita Wilson, a graduate student here at Southwest Texas State University. During this Summer Session I will be conducting a survey on student attitudes toward group discussion for the Speech Department. I hope to include the study in my thesis. I am asking for your cooperation in filling out the questionnaires.

The questionnaires, which can be found in Appendix B, were distributed by volunteers in each class. To avoid any misunderstandings, the directions for completing the questionnaires were read aloud to each group. A verbal example of each type of statement used on the questionnaire was also given. Subjects were told that if they did not have a phone number to use the last four digits of their social security

number. To stress the importance of the accurate completion of the cover sheet, the following explanation was given:

I do not want or need to know who you are.
All the information will become your code number
allowing me to distinguish your code number re-
sponses from someone else's.

Directions for completing each questionnaire were read aloud. The subjects were asked if there were any questions concerning the instructions; they gave no response. Subjects were assured that their scores and answers would be kept in complete confidence. They were also asked to make every effort at answering all items on the questionnaire.

The subjects were given sufficient time to complete the questionnaire. After everyone in the group had finished, the papers were collected and the students were thanked for their time and cooperation.

Experimental Procedures: Administration of the Post-test

The following discussion must be divided into two parts, Control Group and Experimental Group, since the experimental procedure for the post-test differed for each group. The post-test took place six days after the pre-test.

Experimental Group.--After the experimenter was introduced to the classes, she offered the following explanation of her presence:

Today, I would like to complete the second and final step of my survey on group discussion. This requires your participation in a problem-solving discussion.

The students were then placed into small discussion groups composed of five to seven group members. Each group member was given a basic information sheet, a 3 x 5 card describing the role each subject would use during the discussion, and an additional information sheet according to the role that he would play. Thirty minutes was allotted for the discussion to take place. Following this period of time, all groups were asked to have formulated a solution to the problem presented in the discussion. The questionnaires were completed by the subjects immediately after the discussion. Twenty minutes was allowed for the completion of the questionnaires.

Control Group.--The Control Group had no additional element of information added to their discussion. Subjects engaged in a problem-solving discussion with the use of the basic information sheet alone. The same format was employed as in the Experimental Group. Subjects were placed in small groups composed of five to seven members and given the basic information sheet and a randomly selected 3 x 5 card describing the role each group member would use in the discussion. The information sheet was the same as the one used by the Experimental Group. Various "interest groups" were involved in the resolution of the problem. Therefore, group members were assigned a role during the discussion. No extra information sheet was given to this group with which to solve the problem presented to them in the discussion.

Part One on the questionnaire was the same given to all subjects as a pre-test for the experiment. However, the order in which the items appeared was changed and the scales were randomly reassigned positions for the second presentation to the groups.

Instructions for completing parts one and two of the questionnaire were read aloud and verbal notations made were repeated to all groups. After everyone had finished, the papers were collected and gratitude for the subjects' cooperation was expressed.

Experimental Setting

Great care was taken to control the experimental environment. The experiment took place in three similar classrooms. Little, if any, difference existed in seating capacity, lighting, or acoustics. To ensure maximum control the design was developed to equalize the number of sessions and the number of subjects per room for each condition. The experiment was conducted during the course of two days, keeping the time schedule as close as possible to control any environmental variables which might have intervened.

Tabulating the Data

Scoring

The attitude measure consisted of twenty statements assigned to a graphic scale of seven intervals on a continuum

ranging from "strongly agree" to "strongly disagree." The statements were of two types: (1) favorable toward the small group discussion process, and (2) unfavorable toward the small group discussion process.

The scales for the ten "favorable" statements were assigned the following values:

strongly agree : : : : : : : strongly disagree
 7 6 5 4 3 2 1

Values for the "unfavorable" statements were assigned as follows:

strongly agree : : : : : : : strongly disagree
 1 2 3 4 5 6 7

These values served as a key in scoring the subjects' responses. A summation of scale responses was made.

Scores for the sociometric test concerning the element of cohesion were determined by assigning a value of five to those responses in the blank nearest the negative statement, and a value of one to those nearest the positive statement. An example is as follows:

very much : : : : : not very much
 1 2 3 4 5

Statistical Analysis of Data

Both pre-test and post-test questionnaires were

scored and recorded on a tally sheet prepared for this investigation. Pre-test and post-test mean scores were computed for each group on the appropriate measures. In both the Control Group and the Experimental Group, scores were calculated for attitude change and cohesion measures.

An analysis of variance was used to compare the scores for the attitude change measure. This test was employed so that the means from both groups could be compared simultaneously. The means from both groups at both testing times were then compared using this method. Frederick Williams summarizes a discussion of multiple-factor analysis of variance by indicating that

Multiple-factor analysis of variance is a statistical method for testing the consequences of manipulating two or more independent variables in a single research design. Each independent variable (factor) will have two or more levels. The F ratio is the statistic used to conduct the appropriate hypothesis tests in multiple-factor designs. Significance tests among different levels of each factor are known as main effects. Whatever effects are due solely to the combination of factors are known as interaction effects. Given a significant interaction, it is usually necessary to conduct follow up tests of means in order to interpret results. It is also usually necessary to impose particular conditions upon the interpretations of whatever main effects have been observed.⁹

With the foregoing in mind, F was derived by dividing the variance between groups by the variance within groups.

⁹Frederick Williams, Reasoning with Statistics: Simplified Examples in Communication Research (New York: Holt, Rinehart, & Winston, Inc., 1968), p.111.

The t-test for unrelated measures was used to compare both the Control Group and the Experimental Group on the cohesiveness measure. This included two scales dealing with subjects' attitudes toward each other. Frederick Williams, in discussing the t-test, indicates that

The t-test is a statistical method, or model, which can be used for testing the significance of difference between the means of two populations, based upon the means and distributions of two samples. The logic of the t is . . . it is a ratio between the sample mean difference and the standard error of that difference. . . . Given a calculated value of t, this value is interpreted for its probability of occurrence in testing a null hypothesis. If this probability value is equal to or less than the level set for significance, the null hypothesis is rejected in favor of the research hypothesis.¹⁰

As a test of the significance of difference between means, t was found by dividing the sample means by the standard error of the difference between the means. Throughout the experiment the .05 level was accepted as indicative of statistical significance.

The following chapter presents the results of the statistical analysis.

¹⁰Ibid., p. 81.

CHAPTER IV

RESULTS

Two types of data were collected during the experiment. Questionnaire responses are classified here as:

(1) responses to pre-test and post-test attitude measures, and (2) answers to the cohesion scales. The results derived from these analyses will be discussed according to the two major categories. The raw data appear in Appendix D.

Results from the Likert Attitude Scale Measure

The means for the attitude scores were compared via a two-way analysis of variance. According to the scores computed, no significant differences were found between the Control Group and the Experimental Group on the attitude change dimension. An F ratio of 3.90 ($p < .05$) would have been necessary for discovery of any significant differences on the comparisons made. The F ratio obtained for Treatments was 0.10. This implies that no significant differences existed between Experimental and Control Conditions. A non-significant interaction ratio was also discovered. An F ratio

for Time was established at 1.65, thus indicating no difference between pre-test and post-test responses. The analysis of variance summary table for these comparisons appears in Table 2.

TABLE 2
RESULTS OF TWO-WAY ANALYSIS OF VARIANCE COMPARING
PRE-TEST AND POST-TEST RESPONSES FOR EXPERIMENTAL
AND CONTROL GROUPS

Source of Variation	d.f. ^a	Sum of Squares	Mean Squares	F
Time	1	306.38	306.35	1.65 ^b
Treatments	1	19.15	19.15	0.10 ^b
Cells	(3)	(331.69)		
Treatments x Time	1	6.16	6.16	0.03 ^b
Within Cells	184	34141.74	185.55	
Total	187			

^aIn this and all following tables, d.f. stands for degrees of freedom.

^bNot statistically significant

According to data observed throughout this study, the null hypothesis discussed in Chapter Two cannot be rejected. The inclusion of differential amounts of information in a small group discussion proved ineffective in modifying the opinions of group members toward the discussion process.

From these results, subjects appear to have responded in terms of attitudes about the process of discussion. Apparently, outside variables, such as the addition of information, had little effect on individual attitudes toward the process itself.

Results from the Cohesion Scale Measure

A t -test was used for the comparison of groups on the group cohesion dimension. For significant differences to have occurred (d.f. = 92), the following t -ratios would have been necessary: $p < .05$, $t = 1.99$; $p < .01$, $t = 2.63$. When the t -test was applied to the means of the Control Group and the Experimental Group on the first question of Part Two on the questionnaire ("How did you like the group you worked in?"), a t -ratio of 2.00 was obtained. This showed a significance between the two groups at the .05 level. Table 3 shows the data.

TABLE 3

COMPARISONS OF EXPERIMENTAL AND CONTROL GROUP RESPONSES TO THE QUESTION "HOW DID YOU LIKE THE GROUP YOU WORKED IN?"

Group	Mean	S.D. ^a	t	Significance ^b
Control	1.96	1.13	2.00	.05
Experimental	1.56	0.80		

^aStandard deviation

^bd.f. = 92

A comparison was also made between the Control Group and the Experimental Group on Question Two of Part Two in the questionnaire ("If you were taking part in another group discussion, how would you like to work with the same people?"). A t -ratio of 3.03 was obtained, indicating a significant difference between the two groups at the .01 level. Table 4 presents this data.

TABLE 4

COMPARISONS OF EXPERIMENTAL AND CONTROL GROUP RESPONSES TO THE QUESTION "IF YOU WERE TAKING PART IN ANOTHER GROUP DISCUSSION, HOW WOULD YOU LIKE TO WORK WITH THE SAME PEOPLE?"

Group	Mean	S.D. ^a	t	Significance ^b
Control	2.13	1.12	3.03	.01
Experimental	1.53	0.74		

^aStandard deviation

^bd.f. = 92

Statistics reveal that both cohesion null hypotheses reviewed in Chapter Two can be rejected. The inclusion of differential amounts of information in a small group conflict situation did have an effect on the opinions of group members toward each other. While both of the conditions expressed positive reactions to their groups, Experimental subjects had significantly more positive attitudes. Furthermore, the lower standard deviation within the Experimental Group

indicates that those responses were more consistent than responses for the Control Group. The Experimental Group also showed more modification of members' opinions toward each other; subjects were more eager to work again in a similar situation with the same people than in the Control Group. Once again, the responses from the Experimental subjects were more consistent than those in the Control Group. In summary, a considerably higher degree of unity was observed in the Experimental Group than in the Control Group.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

This final chapter offers a brief discussion of the results obtained in this experiment. Several conclusions are formulated and related to the major hypotheses of the study. The chapter concludes with a short summary of the project and recommendations for future research.

Discussion

Experiments of this type, using an equated group technique, are limited in the conclusions that can be drawn and possible comparisons to other situations by restrictions imposed by the experiment itself. However, certain conclusions do seem to be indicated.

Attitude change hypothesis

The findings of this study suggest that the null hypothesis cannot be rejected. The obtained F ratios clearly indicate no significant attitude shifts in either of the two groups. Several possible explanations for the absence of deviations in attitude change deserve consideration.

One possibility is that the element of information has no influence on the attitude dimension within a small group. Subjects might have had preconceived ideas of intra-group behavior. Their behavior patterns may have been pre-established in this type of situation and almost no amount of information would have caused any shift in attitude toward the process of discussion. Other possible explanations of these results are related to specific conditions in this experimental setting. First, the experimental stimulus may not have contained important enough elements of extra information. As suggested earlier by Sherif, our acceptance of information is limited to what is relevant at that time, to bounds of what we consider acceptable, and to what we expect on the basis of attitudes that have already been established.¹ Secondly, the differences between the basic information sheet given to the Control Group and the additional amounts of information given to the Experimental Group may not have been wide enough. Finally, the small group problem-solving session might have been too brief to induce any great amount of attitude change. Additional time given to the discussion might have resulted in a significant difference or differences between the groups. However, under present experimental conditions the non-significant differences that were observed

¹Sherif, In Common Predicament, p. 130.

can as readily be attributed to either the discussion process or to pure chance as to differences in information levels within the groups.

Group cohesion hypothesis

The results of this portion of the study suggest that the null hypothesis can be rejected. The obtained t-ratio of 2.00 (significant at .05) indicates that some form of unity and cohesion did develop within the Experimental Group. In fact, when asked if they would like to work again with the same people in a similar situation, the comparison showed the difference between the groups was significant at the .01 level, with the Experimental Group again showing a significantly higher degree of cohesion.

If the cohesion measure employed in the study was a stable instrument for the type of situation it was formulated to measure, the following observations are warranted. Member satisfaction reported in the Experimental Group was greater than that reported by subjects in the Control Group. Following the course of the discussion, subjects possessing more information were more content with group discussions and expressed a high degree of willingness to work again with the same people. Subjects engaged in discussion with more limited available information showed a lesser degree of group satisfaction. The measurable amount of cohesion observed in the Control Group might be attributed to the interaction

process involved in discussion. Subjects might also have possessed certain fixed attitudes toward other group members at the outset of the session. If this had been the case, major changes in opinions of group members toward each other would have been inhibited. Apparently, the availability of information in small group discussion did bring about the modification of subjects' opinions toward each other. Information also seemed to be instrumental in promoting a greater degree of unity within the group.

Certainly the experiment should undergo replication with special attention paid to variables within the subjects themselves, as well as to outside variables which may affect the group. The element of time availability in the development of cohesion might also be a key factor that should be examined thoroughly.

Implications

The question might be posed, "How do the results of this study apply to the field of Speech Communication?" First, they give experimental evidence that the traditionally assumed value and importance placed on information in resolving small group conflict deserves further consideration. The results of the study indicate the possibility that differential amounts of information injected into a small group problem-solving situation promote the constructive outcomes or resolutions of group conflict, especially in the area of

group cohesion. At the same time, attitude findings indicate that information has little effect on attitudes toward the discussion process. According to Deutsch's definition of "productive conflict," group participants should be satisfied with the outcomes of a problem-solving discussion and feel that they have gained as a result of this conflict.²

Subjects involved in this experiment did feel that they had gained something from the discussion. However, data revealed no significant changes in attitude toward self in groups and attitudes toward other group members. The question arises as to whether or not the present definition of either "productive conflict" or "constructive conflict" is too subjective. The usage of the term might prove too general and depend too much on individual perception and too little on more objective measures.

Thus, the tentative evidence provides limited experimental support for advocating the use of added information as a device for promoting the constructive resolution of small group conflict. The evidence also suggests that more comprehensive amounts of information may also help to establish the cohesiveness of the group.

Excessive significance should not be attached to the

²Morton Deutsch, "Conflict: Productive and Destructive," in Conflict Resolution Through Communication, ed. Fred E. Jandt (New York: Harper & Row, Publishers, 1973), p. 170.

results of this experiment. The present stage of sociometric development is still embryonic, but the potentialities of the new science seem clear. The contribution of this study, together with previous research and the research that will follow may result in more definite conclusions.

Recommendations for Future Research

The experiment and conclusions drawn from it suggest certain possibilities for future research.

1. Findings of this study indicate that differential amounts of information tend to make no difference in group attitude change toward the discussion process. The possibility exists that the stimulus used in the study did not contain sufficient deviations or sufficient amounts of information to promote attitude modification in this direction. Thus, a replication of the study using a different stimulus, or broadening the present stimulus, is needed.
2. A partial replication of this study employing other variables centering around the process of discussion, such as the elegance or detail of solutions produced, would be justified.
3. A partial replication of this study employing various populations other than those used for this study could be advantageous.

The number of existing studies formulated around the additional use of information contributing to the constructive outcome of small group conflict is minimal. For this reason, continued investigations in this area are needed. The problem of terminology within the field continues to be crucial. The use of the phrases "productive conflict" and "constructive conflict" must be examined on a more thorough basis before they are accepted as stable terms and put into standard usage in the area of communication. For further research in the area of conflict, Lewis Coser's The Functions of Social Conflict, and Georg Simmel's Conflict and The Web of Group-Affiliations would provide a firm foundation on which to build.

Summary and Conclusions

From a common sense perspective, the inclusion of additional amounts of information in a problem-solving discussion would seem to assure the constructive resolution of a problem. However, the results of quantitative research on the effects of added information raise a question on the validity of this traditional precept. The experimental evidence, at present, is lean and inconclusive. Research should turn toward examination of information in terms of who the sender is, when the information is available, to whom is it available, how is the information received, and so on. This experimental study was conducted for the purpose of measuring objectively

the effects of information on individual attitudes and group cohesion.

The hypotheses under investigation in this study were that the addition of information to a small group discussion would not result in attitude modification of group members toward each other and toward the discussion process itself, nor would additional information promote intragroup cohesion.

In summary, the results obtained in this experiment seem to justify the conclusions listed below:

1. Attitudes toward the discussion process were not significantly modified as a result of differential amounts of information being included in the problem-solving session.
2. Significantly more positive attitudes of group members toward each other were observed in those groups having more information than in those groups given only the minimum amount of information.
3. Those groups having more information available to them differed significantly in degree of group cohesiveness from those groups without the extra information.

APPENDICES

APPENDIX A

STIMULUS

STIMULUS¹

"SMALL GROUP PROBLEM-SOLVING DISCUSSION"

General Information Sheet

Through its New York City office, the Chemical Company (TCC) has announced plans to construct a \$100-million chemical plant on Resort Island.

Resort Island, which is located off the Louisiana coastline, has miles of some of the most beautiful unspoiled shores on the Gulf of Mexico. Its permanent population of some 3000 residents is concentrated in the island's one town located on the southwestern portion of the island. Public schools and a small state college (SSC) are conveniently located on the mainland.

Many of the island's permanent residents commute by ferryboat to their mainland jobs. The remainder of the population relies on the tourist industry. The tourists are attracted to the island's beaches and to the excellent

¹Stimulus for this study is a group simulation taken from Fred E. Jandt's Conflict Resolution Through Communication; it has been revised for use in small groups in problem-solving situations within the context of this study.

fishing, as well as to the seclusion the island offers to them.

In addition to permanent residents and tourists, Resort Island has a substantial number of summer residents who have built resort homes and cottages for their annual stay on the island.

The Chemical Company (TCC) has already acquired the entire northeastern portion of the island for the proposed chemical plant. The area was purchased from a bankrupt, small electrical equipment manufacturing company for whom the permanent residents of Resort Island had had that portion of the island properly zoned for industrial use. TCC was attracted to Resort Island because of the area's climate and rich oil deposits. Anticipating objections from the island's residents TCC is attempting to line up local and state officials for support. The company has even hired the island's state representative as its legal counsel in the state.

The situation has virtually polarized all who are concerned into five distinct groups:

- (1) The Chemical Company (TCC)
- (2) the summer residents of Resort Island
- (3) the permanent residents of Resort Island
- (4) students from the Small State College (SSC), and
- (5) elected representatives (the mayor)

The mayor of the island's town has called a town meeting during which each representative will have an opportunity to present his position.

PROBLEM: To find a solution to the situation described above, through the use of discussion, that will satisfy as many of the persons involved in the discussion as possible.

Information for the Chemical Company (TCC) Representative

The Chemical Company (TCC) is one of the country's largest corporations. It has assets of over \$3 billion. Its net profit for the last fiscal year was over \$400 million and over 100,000 people are employed directly by TCC.

Construction of its plant on Resort Island will bring many benefits to the area. For example, TCC may need to build a permanent highway bridge connecting the island to the mainland, thus omitting the inconvenience of having to use the ferryboat as the main transportation line. TCC could also offer to employ many of the permanent residents at the new plant on the island itself. The construction of such a plant would boost the island's economy considerably. Construction of such a plant insures substantial tax monies, additional jobs, and indirect benefits such as improved communication and transportation facilities.

Anticipating objections to the construction of its plant on Resort Island, TCC has hired the island's state representative as its legal counsel in the state.

Information for the Mayor

The elected government officials and Chamber of Commerce representatives, of which the mayor is a part, are an alliance between government and business.

The island's state representative has been hired as The Chemical Company's legal counsel in the state. During the discussion, the mayor will take the side of The Chemical Company for the additional boost to the island's economy that the chemical plant would bring.

Chances for advancement in the political strata are favorable for the mayor in the up-coming elections, especially with big business (namely TCC) backing him.

The mayor of the island's one town has taken the initiative to call a town meeting which will bring all who are concerned together for the first time. The mayor is also the chief mediator due to his political position.

Information for the Permanent Residents Representative

The permanent residents are those people who live on Resort Island year round.

The permanent residents are concerned about a statement made by one of their members in an interview printed in the student newspaper of the Small State College (SSC). The permanent resident is quoted as saying, "If the kids go out and lie down in front of the bulldozers, I hope no one is hurt, but I'll be on their side."

The permanent residents have recently learned that the Small State College (SSC) may be forced to close unless additional monies can be found. The Chemical Company (TCC) would bring in enough additional monies to keep the college open.

The main line of transportation between the island and the mainland is a ferryboat. It is the means by which the permanent residents commute to their mainland jobs. The remainder of Resort Island's population is dependent upon the island's tourist industry, which, during peak periods, more than doubles the island's population.

Another concern of the permanent residents is the pollution problems a chemical plant would bring. However, there is always the possibility of a legal loophole, in this case the island's zoning regulations, which may offer a way to prevent the building of a chemical plant on the island.

Information for the Summer Residents Representative

The summer residents are generally better educated people. This group is made up of highly skilled and professional people who share a common vacation area. You are one of these people.

The summer residents own resort homes and cottages on the island. The summer residents spend only a few weeks a year on the island on vacation from their permanent homes and jobs across the United States.

Most of the summer residents had initially visited the island as tourists and had been attracted by its unspoiled beauty and isolation. Some see the construction of a chemical plant on the island in economic terms--the value of their property might increase; others feel its construction will spoil Resort Island's vacation desirability--water and land could become polluted, and business and industry could eventually take over the island.

You, as a representative of the summer residents, may choose to either support or oppose the building of the chemical plant on Resort Island. Take a stand and support it fully.

Information for the Student Representative From
The Small State College (SSC)

The Small State College (SSC) is located on the mainland, convenient to Resort Island. Of the permanent residents and their children who are able to attend college, most attend SSC.

SSC is a 4-year liberal arts institution with some professional and graduate education. The school is fully accredited and has a regional reputation as an educationally strong college.

Students on the campus are politically active; the campus fully participated in the Moratorium Day activities in 1969 and in the Kent State strike in 1970.

Most of the discussion on campus at present is centered on a statement made by one of the permanent residents in an interview printed in the student newspaper. The permanent resident was quoted as saying, "If the kids go out and lie down in front of the bulldozers, I hope no one is hurt, but I'll be on their side."

However, it is also known that the school may be forced to radically curtail its operation unless additional tax monies can be found. The Chemical Company (TCC) would bring enough additional revenue to keep the school well on its feet.

APPENDIX B

QUESTIONNAIRE EMPLOYED

FOR PILOT STUDY

INSTRUCTIONS

On the following pages you will find several statements. Each statement is followed by a scale. On each scale please place an X on the one blank which most accurately describes your personal reaction to the statement. There are no "right" or "wrong" answers. In all cases the best answer is your personal reaction to a statement.

Remember, place an X and only one X on each of the scales.

I consider myself eager to talk to others.

<u>strongly</u> <u>agree</u>	<u>mildly</u> <u>undecided</u>	<u>mildly</u> <u>disagree</u>	<u>strongly</u>
agree	agree	disagree	disagree

I am able to express ideas clearly.

<u>strongly</u> <u>agree</u>	<u>mildly</u> <u>undecided</u>	<u>mildly</u> <u>disagree</u>	<u>strongly</u>
agree	agree	disagree	disagree

I consider myself knowledgeable.

<u>strongly</u> <u>agree</u>	<u>mildly</u> <u>undecided</u>	<u>mildly</u> <u>disagree</u>	<u>strongly</u>
agree	agree	disagree	disagree

In a small group discussion, I consider myself a leader.

<u>strongly</u> <u>disagree</u>	<u>mildly</u> <u>undecided</u>	<u>mildly</u> <u>agree</u>	<u>strongly</u>
disagree	disagree	agree	agree

Politically, I consider myself well-informed.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

An objective of group discussion is to reach group consensus.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

Small group discussion is boring.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

The process of discussion is mechanical.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

I keep up with current events.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

Members of a discussion group should have the same relative status.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

Communication is becoming less important because of technical advances.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

To be a good group member a person must be completely objective.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

Members of a discussion group should be well-acquainted with other group members before the discussion takes place.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

Small groups are overused as a means for solving problems, making decisions, or working out ideas.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

The main purpose of discussion is to satisfy the needs for human companionship.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

Modern life is group life.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

The small group discussion situation serves to smother creativity.

<u>strongly</u> agree	<u>agree</u>	<u>mildly</u> agree	<u>undecided</u>	<u>mildly</u> disagree	<u>disagree</u>	<u>strongly</u> disagree
--------------------------	--------------	------------------------	------------------	---------------------------	-----------------	-----------------------------

A decision-making group has no impact of any kind except to waste the time of the participants.

<u>strongly</u> disagree	<u>disagree</u>	<u>mildly</u> disagree	<u>undecided</u>	<u>mildly</u> agree	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	---------------------------	------------------	------------------------	--------------	--------------------------

Unity is not an important characteristic of a small group.

<u>strongly</u> agree	<u>agree</u>	<u>mildly</u> agree	<u>undecided</u>	<u>mildly</u> disagree	<u>disagree</u>	<u>strongly</u> disagree
--------------------------	--------------	------------------------	------------------	---------------------------	-----------------	-----------------------------

The leader of the group is the person other members like the best.

<u>strongly</u> agree	<u>agree</u>	<u>mildly</u> agree	<u>undecided</u>	<u>mildly</u> disagree	<u>disagree</u>	<u>strongly</u> disagree
--------------------------	--------------	------------------------	------------------	---------------------------	-----------------	-----------------------------

A person is more likely to be on the defensive when there are other people around.

<u>strongly</u> agree	<u>agree</u>	<u>mildly</u> agree	<u>undecided</u>	<u>mildly</u> disagree	<u>disagree</u>	<u>strongly</u> disagree
--------------------------	--------------	------------------------	------------------	---------------------------	-----------------	-----------------------------

Individuals should carefully weigh all possibilities before making a decision.

<u>strongly</u> disagree	<u>disagree</u>	<u>mildly</u> disagree	<u>undecided</u>	<u>mildly</u> agree	<u>agree</u>	<u>strongly</u> agree
-----------------------------	-----------------	---------------------------	------------------	------------------------	--------------	--------------------------

Group members with strong leadership qualities have more influence over other group members.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

Discussion creates greater motivation, interest, and involvement in learning and decision-making.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

Those group members in power are also the ones who talk the most.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

Communication serves to increase the uniformity of opinion within the group.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

A collection of individuals working together in a group is more productive than individuals working alone.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

There is usually one member of a group who will contribute more information than the other members.

<u>strongly</u> <u>agree</u>	<u>mildly</u> <u>undecided</u>	<u>mildly</u> <u>disagree</u>	<u>strongly</u>
agree	agree	disagree	disagree

The more information there is available, the sooner a solution to the problem will be found.

<u>strongly</u> <u>agree</u>	<u>mildly</u> <u>undecided</u>	<u>mildly</u> <u>disagree</u>	<u>strongly</u>
agree	agree	disagree	disagree

Increased information improves the quality of the group solution.

<u>strongly</u> <u>disagree</u>	<u>mildly</u> <u>undecided</u>	<u>mildly</u> <u>agree</u>	<u>strongly</u>
disagree	disagree	agree	agree

Group discussion is producing a society of bland conformists for whom togetherness is the main goal in life.

<u>strongly</u> <u>disagree</u>	<u>mildly</u> <u>undecided</u>	<u>mildly</u> <u>agree</u>	<u>strongly</u>
disagree	disagree	agree	agree

Before accepting any new information make sure it is correct and well-documented.

<u>strongly</u> <u>agree</u>	<u>mildly</u> <u>undecided</u>	<u>mildly</u> <u>disagree</u>	<u>strongly</u>
agree	agree	disagree	disagree

What a person says in a group is influenced by how other people feel about him.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

Individuals prefer to communicate only with persons they like.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

Discussion develops the abilities and creative potential of the members of a group.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

People behave differently as members of a group than they do as individuals.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

APPENDIX C

QUESTIONNAIRES EMPLOYED

FOR THE EXPERIMENT

Do not put your name on the following questionnaires. Although you are to remain anonymous, it is necessary to be able to distinguish your reaction from others. Before continuing any further, please fill in the following spaces.

Class Period: _____

Last Initial: _____

Last Four Digits of
Social Security Number: _____

Your Sex: _____

Your Age: _____

- 1) Please answer all questions. Do not omit any.
- 2) Place an X in the middle of spaces, not on boundaries.
- 3) Put only one X for each scale.

In completing the following scales, please indicate only what you feel personally. Mark each scale independently and separately; do not refer to other scales.

[illegible]

intel- **unintel-**
ligent : : : : : : **X** : **ligent**

[illegible]

```
intel-                                unintel-  
ligent      :      :      :      :      X      :      :ligent
```

[illegible]

If your opinion is neutral on the scale or if the scale is irrelevant, then place your mark in the middle space.

Instructions for Part Two:

Questions one and two are composed of a scale running from "very much" to "not very much." Place an X in the space which most clearly represents your opinion.

Questions three and four are self-explanatory. Mark or answer them to the best of your ability. Remember, there are no "right" or "wrong" answers. Make your answers as accurate as possible. The results of these questions will have no bearing on your grade in this class.

PART ONE

Instructions

On the following pages you will find several statements. Each statement is followed by a scale. On each scale please place an X on the one blank which most accurately describes your personal reaction to the statement. There are no "right" or "wrong" answers. In all cases the best answer is your personal reaction to a statement.

Remember, place an X and only one X on each of the scales.

1. I consider myself eager to talk to others.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

2. Group members with strong leadership qualities have more influence over other group members.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

3. A decision-making group has no impact of any kind except to waste the time of the participants.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

4. Before accepting any new information make sure it is correct and well-documented.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

5. The process of discussion is mechanical.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

6. The leader of the group is the person other members like the best.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

7. There is usually one member of a group who will contribute more information than other members.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

8. I am able to express ideas clearly.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

9. Communication serves to increase the uniformity of opinion within the group.

<u>strongly</u>	<u>disagree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>agree</u>	<u>strongly</u>
disagree		disagree		agree		agree

10. People do not behave differently as members of a group than they do as individuals.

<u>strongly</u>	<u>agree</u>	<u>mildly</u>	<u>undecided</u>	<u>mildly</u>	<u>disagree</u>	<u>strongly</u>
agree		agree		disagree		disagree

11. Members of a discussion group should be well-acquainted with each other before the discussion takes place.

strongly agree agree mildly agree undecided mildly disagree strongly disagree

12. A collection of individuals working together in a group is more productive than individuals working alone.

strongly agree agree mildly agree undecided mildly disagree strongly disagree

13. A person is more likely to be on the defensive when there are other people around.

strongly agree agree mildly agree undecided mildly disagree strongly disagree

14. Discussion does not develop the abilities and creative potential of the members of a group.

strongly disagree disagree mildly disagree undecided mildly agree strongly agree

15. Increased information improves the quality of the group solution.

strongly disagree disagree mildly disagree undecided mildly agree strongly agree

16. Members of a discussion group should have the same relative status.

strongly agree mildly undecided mildly disagree strongly
agree agree disagree disagree

17. I consider myself knowledgeable.

strongly agree mildly undecided mildly disagree strongly
agree agree disagree disagree

18. Unity is not an important characteristic of a small group.

strongly agree mildly undecided mildly disagree strongly
agree agree disagree disagree

19. The small group discussion situation serves to smother creativity.

strongly disagree mildly undecided mildly agree strongly
disagree disagree agree agree

20. Discussion creates less motivation, interest, and involvement in learning and decision-making.

strongly agree mildly undecided mildly disagree strongly
agree agree disagree disagree

PART TWO

1. How did you like the group you worked in?

very much : : : : : not very much
 1 2 3 4 5

2. If you were taking part in another group discussion, how would you like to work with the same people?

very much : : : : : not very much
 1 2 3 4 5

3. List the members of your group beginning with the one who contributed most to the group discussion to the one who contributed least to the discussion.

a.

b.

c.

d.

e.

f.

4. What was the group solution to the problem?

APPENDIX D

RAW DATA

Table 5.--Summary of Correlational Frequency Analysis of Thirty-Six Statements Pilot Tested for the Likert Scale Attitude Measure

Statement		CC ^a	Type ^b
1.	I consider myself eager to talk to others. . . . .	.93	+
2.	I am able to express ideas clearly. . . . .	.84	+
3.	I consider myself knowledgeable. . . . .	.92	+
4.	In a small group discussion, I consider myself a leader. . . . .	.68	+
5.	Politically, I consider myself well-informed . . . . .	.01	+
6.	An objective of small group discussion is to reach group consensus. . . . .	.77	+
7.	Small group discussion is boring . . . . .	.77	+
8.	The process of discussion is mechanical . . . . .	.82	+
9.	I keep up with current events. . . . .	.74	+
10.	Members of a discussion group should have the same relative status. . . . .	.90	+
11.	Communication is becoming less important because of technical advances . . . . .	.47	+
12.	To be a good group member a person must be completely objective. . . . .	.68	+
13.	Members of a discussion group should be well-acquainted with each other before the discussion takes place. . . . .	.94	+
14.	Small groups are overused as a means for solving problems, making decisions, or working out ideas. . . . .	.44	+
15.	The main purpose of discussion is to satisfy the need for human companionship. . . . .	.78	+
16.	Modern life is group life. . . . .	.41	+
17.	The small group discussion situation serves to smother creativity . . . . .	.95	+
18.	A decision-making group has no impact of any kind except to waste the time of the participants. . . . .	.93	+
19.	Unity is not an important characteristic of a small group. . . . .	.97	+
20.	The leader of the group is the person other members like best. . . . .	.97	+
21.	A person is more likely to be on the defensive when there are other people around . . . . .	.93	+
22.	Individuals should carefully weigh all possibilities before making a decision . . . . .	.70	+
23.	Group members with strong leadership qualities have more influence over other group members . . . . .	.90	+
24.	Discussion creates greater motivation, interest, and involvement in learning and decision-making. . . . .	.84	+
25.	Those group members in power are also the ones who talk most . . . . .	.01	+
26.	Communication serves to increase the uniformity of opinion within the group. . . . .	.88	+
27.	A collection of individuals working together in a group are more productive than individuals working alone. . . . .	.85	+
28.	There is usually one member of a group who will contribute more information than other members. . . . .	.96	+
29.	The more information there is available, the sooner a solution to the problem will be found. . . . .	.28	-
30.	Increased information improves the quality of the group solution. . . . .	.96	+
31.	Group discussion is producing a society of bland conformists for whom togetherness is the main goal in life . . . . .	.18	+
32.	Before accepting any new information make sure it is correct and well-documented. . . . .	.95	+
33.	What a person says in a group is influenced by how other people feel about him . . . . .	.68	+
34.	Individuals prefer to communicate only with persons they like. . . . .	.01	-
35.	Discussion develops the abilities and creative potential of the members of the group. . . . .	.88	+
36.	People behave differently as members of a group than they do as individuals. . . . .	.90	+

^aCorrelational coefficient.^bType: Positive statements indicated by +; negative statements indicated by -.

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BIBLIOGRAPHY**

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