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Information Input and Performance in Small Decision-Making Groups.

Edwin Holman Ryland
Louisiana State University and Agricultural & Mechanical College

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Information Input and Performance in Small Decision Making Groups

A Dissertation

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in partial fulfillment of the
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in

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by
Edwin Holman Ryland
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M.A., University of Arkansas, 1965
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Abstract

The following research hypothesis was investigated in the present study:

> Increasing the amount and specificity of information should facilitate group decision-making and enhance subsequent measures.

College students were employed in a study of group and individual responses to information input varied by type and amount. Statistics, example, and testimony were varied in minimal and augmented amounts of information to produce six experimental conditions assigned to four groups per condition with four subjects per group. Groups rank-ordered a set of four solutions previously generated and ranked by a panel of experts for solution of a problem in labor economics following input of one of the six information conditions and a subsequent twenty minute discussion. No significant differences were obtained among group decisions as a function of information type or amount or an interaction between the two information variables.

A second area of analysis concerned measures of time required by each discussion phase. No significant differences were obtained among treatment conditions on measures of the orientation, evaluation, or control phases of discussion or

total time to completion of the rank-ordering task.

Participants made individual ratings of task difficulty and complexity, group performance, own liking for the discussion task, and ratings of individual performance. Although no statistically significant differences among treatments were obtained on individual measures, ratings of own performance, performance of others, and one's ratings by others were consistently higher in example and testimony conditions than in the statistical information condition. Further, attainment of consensus in rank-ordering was related to superior individual performance ratings but unrelated to similarity of "own," "others," and "by others" ratings within groups over the experimental sample. The findings were interpreted as evidence that group cohesiveness was good in that performance ratings were high in consensus groups.

Consistent findings of no differences in decision-making behavior, efficiency in terms of time consumed in discussion, and individual ratings of the group and individual performance lead to the conclusion that, for the sample and experimental conditions utilized in the present study, increasing the amount and specificity of information does not improve group decisions or efficiency and does not enhance participants' ratings.

Chapter 1

Introduction

Information in its broadest definition pervades our consciousness. Attention to the subject of information leads researchers to all kinds of inquiries. A major concern in applied research is production of ideas, decisions and social influence as a dependent measure related to information input. Anderson (1965, p. 289) reflects this concern when he suggests that maximum productivity should occur under two conditions: (1) when needed facts and opinions are immediately available and accepted, and (2) when the fact finding qualities of the information and opinions are perceived. Cathcart expresses the belief that information is an essential element in social influence. "There can be little doubt that evidence occupies a pivotal position in the generation of proof through logical arguments...." (1955, p. 227)

Many ways exist to pierce the subject of information. The broadest view suggests that all environmental and internal cues are information, that is, each cue has the potential of affecting its receiver and may generate a biological response, a cognitive response, or perhaps a response observable as overt behavior. Theories of social influence, conformity, commitment, congruity, cognitive balance, dissonance,

indeed all of the psychology of interpersonal relationships and man-environment relationships, have the common element of informational cues. A researcher may ascribe to the panoramic view that all influences are, theoretically, cues comprising a message or battery of messages. Substantive message content is the focus of the present study.

Two general research hypotheses were investigated in the present study: (1) variable amounts of information produce variable performance in decision making, and (2) variable types of information produce variable performance in decision making. Both information amount and type were examined in a small group context.

Research in information is highly diffuse, with few studies of any given variable and with little suggestion in the literature as to how this diffuse matter can be drawn together. Conflicting results often compound the problem of consolidation. Hardly a single area of consistency of findings has appeared, and some suggestions for possible research readily emerge. A review of recent research will demonstrate the inconsistencies and will generate a rationale for the present study.

Information Amount and Type and Judgment

Shaw (1954) and Gilchrist, Shaw, and Walker (1954) investigated the hypothesis that increasing the amount of information in a position in a four-man network improves decision making performance of the individual in that position and improves his ratings from other members of the group.

When a position was loaded with information disproportionate to the amounts received by the other three positions, the loaded position generally improved his decision making performance. However, S's showed no significant differences in their ratings of the relative value of positions in the network. A corollary finding was the fact that group performance was unaffected by unequal distribution of information. Findings, therefore, generally supported the hypothesis that increasing the amount of information input should improve the recipient's performance but does not confirm the suggestion that group performance or individual ratings should be affected by imbalanced information distribution.

Porat and Haas (1969) tested the hypothesis that more information will result in more accurate levels of group goal-setting and decision making. The vehicle for the Porat and Haas investigation was a marketing management game in which the "more information" management groups received progressively greater amounts of information relevant to strategies for marketing the hypothetical product through successive "marketing periods." The investigators found that groups tended to ignore older information and prior experience in favor of the most recent facts available, and, in addition, participants receiving less information learned at a faster rate than those with more information. Findings failed to support the proposition that differential amounts of information generate differential managerial success in decision making.

Goldstein (1957) also investigated the notion that increasing the amount of information should improve quality of decisions and added the dimension of information type to his research. Goldstein, following earlier research by the Lorge team (Lorge, et al., 1959), utilized a sample of Air Force ROTC students in providing information leading to a solution of a practical field problem in engineering. The problem had been adapted by the Lorge team from a model used in World War II by the O.S.S. for assessing military leadership. Two levels of information were established: (1) minimal -- "only that information deemed necessary to permit a variety of solutions"; (2) augmented -- the "minimum" information plus "additional information which, if used, would produce a more elegant solution." (p. 8) The second independent variable, type of information, was defined in the following manner: (1) verbal -- printed information only; (2) photographic -- printed information plus a set of five photographs of a mined road to be crossed in the problem. Solutions were generated in written form by subjects and were evaluated in two ways: a) each solution was scored either pass or fail by the experimenter, and b) an extensive quality point system, previously developed by the Lorge team, was applied to the solution(s) of each subject. Four experimental conditions were created -- a) minimal-verbal, b) minimal-photographic, c) augmented-verbal, and d) augmented-photographic. Goldstein concluded that although verbal information was more strongly associated with elegant solutions than photographic, augmented

information failed to produce more sophisticated solutions to the field problem.

Lilly (1958) predicted that "additional" information should be a better predictor of task success than a substantially smaller amount of information. In the initial phase of the study, two female subjects were asked to respond to a set of 20 life-situation items. For example, "If you had to advise someone on whether a small, private school is preferable to a large public university, what would you recommend?" Items were taken from the Sargent Insight Test. Transcripts of the two subjects' responses were made and a multiple choice test was devised for each subject, each item containing as one of the alternative answers a response from the subject's transcript. In addition, following the Sargent Insight Test the two subjects were interviewed separately and audio tapes made of the interviews.

In the second phase of the study, two groups of female judges predicted responses of the two subjects from information provided. Two conditions were established: a) written information only, selected from the transcripts, and b) written information plus portions of the taped interviews. The judges predicted the two subjects' test responses, unaware that one of the alternatives on the multiple choice test was an actual response given earlier by subjects. More accurate judgments were made among judges with additional information.

A further example illustrates research investigating information amount and decision or judgment. Thibaut, et al.

(1960) examined the proposition that sharing relevant information increases correctness of judgments. Subjects worked in pairs (dyads) or in pairs of dyads. Members of the dyad were separated by partitions. Each was given the task of counting dots flashed onto a screen. To aid in determining the number of dots to which a person was exposed, each subject was told how many dots his and his partner's dots totalled for each trial. In the "with communication" condition, members of the dyad or double dyad were allowed to discuss, prior to a decision, the information given them, e.g., that the number of dots for both members or dyads equals nine. The most likely complementary arrays could therefore be discussed prior to decision. Decisions for the "with communication" conditions (single dyads and double dyads) and for the "without communication" condition (single dyads and double dyads) were scored either right or wrong. Sharing relevant information was found to increase the number of correct decisions. Rankings for the four conditions were obtained for the number of correct judgments: 1. double dyad-communication; 2. single dyad-communication; 3. double dyad-no communication; and 4. single dyad-no communication.

The six studies described above investigated the hypothesis that increasing the amount of information available to an individual or group increases the quality of individual or group performance or judgments. Goldstein added the information type variable. Even granting the fact that task, situation, and dependent measures varied considerably among

the several research efforts, it is clear that the findings are inconsistent. Only Lilly found that increasing information level improved judgment. Findings of Shaw and of Gilchrist, Shaw and Walker were mixed. Increasing information amount in a position in a group improved the performance of the individual in that position, but did not affect group performance. Porat and Haas and Goldstein obtained a null relationship between information level and performance or judgment. Thibaut, et al. indirectly related information level, through sharing, to judgment.

Information as a Vehicle to Social Influence

A second group of studies have considered the utility of information as a means of social influence. All the studies here concern conditions whereby information may influence an auditor or audience. Dependent measures include opinion change, attitude change, perception of information content, perception of internal consistency, perception of the use of questionable sources, ratings of the persuasiveness of speeches, and change in credibility ratings of speakers.

Persuasion scholars generally agree that information is vital to the persuader. "It is generally ineffective to recommend a course of action to an auditor until he has enough information to serve as a basis of opinion formulation or change. If the listener does not have the information that would support a decision, then it may be the speaker's

most important function to provide it." (Clevenger, 1966, p. 104) Mills suggests that a speaker needs to transmit information, that back of his conclusion or assertion "are the premises that listeners with good sense expect a speaker to know what he is talking about, and that ethical speakers do not face an audience unprepared." (Mills, 1966) Hovland and Janis (1959) note that persuasion is often predicated on information, hence "content-bound." (pp. 9-10)

From the standpoint of an applied researcher, teacher, or consultant, information can be treated as one aspect of proof. "The nuclear physicist, the psychologist, the lawyer, and the policeman are all interested in proof...the individual who wishes to prove his case and secure belief...can do so only by producing evidence to support his ideas." (Bettinghaus, 1966, pp. 2-5) Toulmin (1958) suggests that persuasion begins with evidence, or information, and proceeds to claims, or inferences drawn from the evidence.

A general theory of information requirements in social influence is a viable theory to investigate. On the surface, and as the teaching of persuasion very often indicates and assumes, a theory that information is necessary to social influence seems almost axiomatic. The theory has been tested, however, with most results failing to support the theory. Representative studies will be discussed here.

Following Festinger (1950) and Osgood and Tannenbaum (1955), Snyder, Mischel, and Lott (1960) predicted an inverse relationship between information level and shift to conformity

("conformity behavior"). The theory held that the higher the information level of the individual the less likely he would be to shift toward public judgments of others. Subjects either received information or were given no information about the topic modern art. Subjects in the two conditions were exposed to the same posttreatment situation. In groups of four or five, subjects saw two modern paintings and made allegedly private judgments about the quality of the paintings. Following the balloting, a bogus tally was presented to the group, allegedly representing the individual responses of group members. A majority or anchor was experimentally established as a result. Subjects were again asked to judge the paintings, which had been repositioned to justify a second ballot. The predicted resistance to shift was true for the with-information sample. A second independent variable was studied, which may have confounded the results. Snyder, et al. predicted that high valuation of aesthetic objects as measured by the Allport-Vernon-Lindzey Study of Values aestheticism scale would inhibit conformity behavior. The hypothesis was confirmed, but it is difficult to determine whether the resistance to conformity pressure was due to information level alone, aesthetic valuation alone, or an interaction between the two variables.

McCroskey (1970) and McGuire (1961) studied the effects of information on resistance to counterpersuasion. McCroskey suggested that auditors will be less affected by counterpersuasion from a second speaker if the first speaker's message contains evidence than if the first speaker's message does

not contain evidence. Pre- and posttest scores were taken from 264 college students. McCroskey found that subjects who had been exposed to an initial message containing evidence indicated attitudes more in line with the intent of the initial speaker than subjects who were exposed to an initial no-evidence message followed by a counterpersuasive message. Therefore, the evidence appeared to serve as an inhibitor to counterpersuasion. In addition it was found that a speaker of low or moderate credibility could increase his credibility by the use of evidence. A highly credible source, however, would benefit little from the use of evidence unless a previous speaker had included evidence. McGuire (1961) found that repeated arguments rather than new arguments in refutation were most effective in inhibiting the effects of counterpersuasive discourse. While McGuire was interested in arguments as entities and McCroskey in arguments as substantive or nonsubstantive messages, both studies seem to support the position that information can serve the function of reinforcing assertions in persuasive discourse.

In one of the earliest studies of information treated as evidence in persuasive discourse, Cathcart (1955) posed three hypotheses:

1) When attempting to establish conviction or to win belief, the speaker must use adequate evidence in support of his contentions.
2) If the speaker is not considered to be an authority the sources of his evidence should be cited.

3) Qualifications of the source should be given.

Evidence in a persuasive speech was varied in three ways: amount, citation of source and qualification of source. A basic speech was modified in four conditions: a) deletion of all specific evidence, substitution of generalized statements; b) all contentions supported with evidence, no link to source; c) all evidence maintained exactly as in speech b, but with citation of sources; d) same as speech c, with qualifications of sources. The Woodward Shift-of-Opinion Ballot was used to obtain an objective measure of listener response. A general linear speech rating scale provided a check on delivery variables, presumed to be constant over the four conditions. A background questionnaire determined what each auditor knew about the subject, speaker and evidence. The findings indicate only that the use of evidence produces more opinion shift than no evidence at all. No significant differences were found among the three "with evidence" conditions, except for the perplexing finding that speech c -- the "with qualifications of source" speech -- yielded no greater shifts than speech a (the "no evidence" condition). Results of the Cathcart study appear to run counter to those assumptions noted in the introduction to the present section as to the necessity of qualified information in persuasive discourse.

Ruechelle (1958) investigated the notion that differences exist between "emotional" and "intellectual" appeals. He posited that if persuasive appeals can be categorically

classified as emotional or intellectual, the source for such classification might be found in recognition of these appeals by observers. Emotional appeals were defined as those aspects of persuasive discourse that do not appeal specifically to the listener's reasoning faculty. Intellectual appeals were those aspects of a message that must be processed in some systematic way by the listener. Twenty-one adult males, all experienced public speakers, were filmed as they presented two-minute persuasive speeches on topics of their own choosing. Immediately after his presentation, each speaker was asked to indicate privately the relative degrees of emotional and intellectual appeals he had employed. Subjects consisted of 151 beginning speech students who judged motion picture and sound presentations of the 21 speeches and 60 adults (30 without experience in the study of speech and 30 "experts") who rated written transcriptions of the 21 speeches. For each of the presentations or manuscripts subjects were asked to judge the quantity of emotional appeal on a five-point scale and to give the basis for their judgment (content, delivery or wording, general impression, unidentifiable factor). The major finding was that the speeches could not be consistently rated in terms of emotional or intellectual appeals. It was learned, however, that the subjects based their judgments mainly on general impressions rather than specific aspects of the presentation.

Dresser (1963), like Cathcart, hypothesized that "satisfactory" evidence is more effective in producing

attitude change than "unsatisfactory" evidence. Four groups of students were used as subjects. Each group received one of four forms of an argumentative speech. The four conditions were a) satisfactory -- well documented; b) satisfactory -- relevance and internal consistency in the use of evidence; c) unsatisfactory -- questionable sources; and d) unsatisfactory -- irrelevance and internal inconsistency in the use of evidence. A pretest of attitude was administered to each subject, comprised of eight Likert-type items for each area. A week after pretesting the four speeches were presented to their respective treatment groups. Two posttest measures were taken: a speech rating scale which measured approximation of the quality and persuasiveness of the speech by subjects and a posttest of the pretested attitude to determine attitude change. Analysis revealed the following:

1) Satisfactory evidence was not more successful in changing audience attitude than unsatisfactory evidence.
2) Different types of unsatisfactory evidence did not differ significantly in ability to change attitudes.
3) Audiences did not perceive irrelevance or internal inconsistency in the evidence characteristics of the two forms of the speech, but they were partly successful in recognizing the use of questionable sources.
4) The type of evidence used did not affect the ratings by audiences of the persuasiveness of the speeches.

Conclusions drawn were that the quality of evidence does not significantly affect the power of a speech to influence listener attitudes, and that listeners rarely perceive weaknesses in evidence, a finding generally consistent with that of Cathcart.

McCroskey (1969) reviewed methods and results in behavioral research involving evidence as the independent variable. Twenty-two studies were considered, most of which were conducted by McCroskey and his associates at Michigan State University (McCroskey, 1967), with attitude or opinion change as the principle dependent measure. McCroskey makes a number of generalizations based on his review:

1. Including good evidence has little, if any, impact on immediate attitude change or source credibility if the audience is familiar with the evidence prior to exposure to the message.
2. Including good evidence has little, if any, impact on immediate attitude change or source credibility if the source of the message is initially perceived to be highly credible.
3. Including good evidence has little, if any, impact on immediate audience attitude change if the message is delivered poorly.
4. Including good evidence may significantly increase immediate audience attitude change and source credibility when the source is initially perceived to be moderate-to-low-credible, when the message is well

delivered, and when the audience has little or no familiarity with the evidence.

5. Including good evidence may significantly increase sustained attitude change regardless of initial credibility, delivery, or the medium.
6. The medium of transmission of a message has little, if any, effect on the functioning of evidence in persuasive communication.

Two studies were found in which information input was the independent variable in a group interaction context. Both investigated the effects of certain risk-related information on the risky shift. St. Jean (1970) suggested an example of a "life-situation" item which is the focus of risk-related information in the two studies: a man decides whether to leave a relatively secure but dull job for a position that offers excitement but no long-term stability. In both the St. Jean study and research by Silverthorne (1970) similar items were used on which to measure the degree of risk a subject was willing to recommend on each item. St. Jean posed three hypotheses in regard to the risky shift: 1) the shift to risk will be greater in group than alone conditions; 2) both risk-level information (statements by others in the group discussion reflecting personal risk-levels on items similar to that described above) and pro and con information (substantive arguments) are necessary for the occurrency of a full risky shift; 3) risk-level information will be as effective in a group as in an alone setting, but pro and con

information will be more effective in an interactional setting. The four levels of information were a) full information (both "risk-level" and "pro and con" information); b) pro and con information; c) risk-level information; and d) no information (control group -- no discussion of risk items). Each level of information occurred for both a group and an alone condition. Prior to administration of treatments each subject privately indicated the level of risk he was willing to recommend on each item. He was tested following the treatment for degree of risky shift. "Risky shift" was defined as adoption of a probability of success on an item smaller than that indicated on the pretest. Results confirmed the hypothesis that social interaction increases the shift to risk. However, the second and third hypotheses were disconfirmed. Both risk-level and pro and con information were not required for a risky shift, nor was risk-information as effective in a group as in an alone setting. Full risky shifts were obtained from pro and con information, but only a small shift for risk-level information. Further, in the alone condition there was no shift whatsoever for risk-level information and only a small shift for pro and con information. In short, substantive information in a group context produced a significant incidence of risky shift.

Somewhat different in methodology from the St. Jean study, but similar in theory, a dissertation by Silverthorne (1970) suggested that relevant information generated in groups is one of the main causes of group shift in risk

situations. Thirty-two five-man groups were utilized in a two stage experiment. In stage 1 each subject was asked to recommend a probability of success indicating his level of risk on each item. In stage 2 each subject was randomly assigned to one of four conditions, with eight groups in each condition. The four experimental conditions were: a) a Standard condition in which the standard risk taking experimental paradigm was used (that is, subjects were tested twice with a time lapse between sessions); b) a Balance condition in which the subjects were required to generate an equal number of reasons in favor of the risky and cautious alternatives; c) the Caution condition in which subjects were required to generate reasons in favor of the cautious alternative; and d) the Risk condition in which subjects were asked to generate reasons favoring a more risky approach. These listings were completed prior to the group discussions. Results showed that a group shift occurred on an item in the direction of the average initial response. Further, the content of the group discussions corresponded to the direction of the shift. Also, the content analysis demonstrated that the Risk, Caution, and Balance procedures were generally successful in varying input of information into the group discussion. Thus, the Risk procedure successfully increased the number of risk statements on all of the items. Similar results were obtained with the Caution procedure. Here the number of cautious statements were increased which resulted in a shift to caution on all of the items. However, the

Balance procedure was only partially successful in eliminating the group shift and equating the number of risky and cautious statements made in discussion. Silverthorne interprets the findings, therefore, as largely supportive of the hypothesis that relevant information generated in groups is one of the main causes of group shift in risk situations.

Conclusions from Review of Research in Information

A number of observations may be made concerning treatment of variables, methodologies and experimental contexts in the studies reviewed above. The major concerns may be summarized as follows: (1) information is rarely defined in terms of its particular properties, such as meaningfulness to recipients; (2) little attention has been given to distinguishing types of substantive content of messages; (3) inadequate consideration has been given to variable amounts of information; (4) experimental conditions are often extremely obtrusive, reducing the validity of research; and (5) little attention has been given to effects of information inputs on group performance and related individual measures.

1. Information is rarely defined in terms of the meaningfulness of the message to recipients. In the studies reviewed above, only Cathcart attempted to learn what subjects knew about the topic prior to administering treatments. Prior knowledge of the topic would seem to be an important factor if discrimination among treatments is predicated on information level. Further, no effort has been recorded to describe treatment messages in terms of their relevance to

recipients. A method should be devised to describe messages in terms of relevance, that is, their probable degree of ambiguity of content, in order to optimize assessment of differential effects of messages on audiences. Third, little effort has been cited to assess attitudinal predispositions of subjects toward the topic area. Numerous sources can be cited that support the theory that predispositions of subjects toward the topic color perception of that topic (see, for example, Sherif, Sherif, and Nebergall, 1965, and Hovland and Janis, 1959). Only where attitude or opinion change was a dependent variable have pretreatment attitudes or opinions been measured. If an essential assumption of homogeneity of sample must be made, an effort must be effected to avoid topic bias. In short, careful definition and description of the message not only in regard to its substantive content but also in terms of its attitudinal properties, should yield a greater understanding of its effects, will make possible a more sophisticated understanding of sources of variation found in experiments with information as the independent variable.

2. Little attention has been given to distinguishing types of substantive content of messages. Some researchers are not interested in information type, of course. But the several approaches reviewed above suggest a prevailing concern with information type. Goldstein distinguished information as either verbal (written) or photographic (still photographs); Cathcart viewed information as topic-related

or source-related; Ruechelle distinguished between "emotional" and "intellectual" content; St. Jean established "risk-level" and "pro and con" information types. These are examples of particular efforts to define information type. Although no claim is made here that only a single scheme is a viable vehicle for research, a method should be devised to define substantive information types across messages. That is, definitions of information type should be applicable to a wide variety of messages in a variety of experimental contexts in order to maximize the utility of the typing scheme for research. Such a method will be defined in Chapter 2.

3. Inadequate consideration has been given to variable amounts of information. Although several studies consider the amount variable, findings are inconclusive and some investigations, particularly those in the persuasion paradigm, examine only "some" or "none" as distinctions in amount. Only Goldstein carefully defines the method of arriving at differential amounts. Other descriptions are ambiguous to the extent that exact replication of messages would be impossible. Multiple amounts, not found in any studies reviewed, would be desirable, but equally important are careful descriptions of the method of arriving at the two or more treatment amounts. In addition to the studies reviewed above, Higbee (1969), in his survey of research in fear-threat appeals in persuasive communication, suggests the probability of differential effects of varying the amount of information among treatments. In short, research should be continued to

resolve the inconsistent findings of present studies.

4. Care should be taken to conduct studies in an unobtrusive fashion. Although most researchers seem to ascribe vocally to the need for unobtrusiveness in experimentation (see, for example, Webb, et al., 1966 and Miller, 1970), research in information is usually reactive. No study reviewed indicated that the research had been conducted within the framework of some normal activity of its subjects and in subjects' normal environment. While reactivity may rarely be eliminated entirely from experiments, unobtrusive conditions should be sought and reported fastidiously.

5. Few investigations have been made of the effects of information input in the group decision-making paradigm. Five studies reviewed above dealt with groups: Shaw and Gilchrist, Shaw, and Walker were concerned largely with relative centrality of positions in communication networks; Silverthorne and St. Jean were interested only in production of the risky shift in groups; only Porat and Haas were interested in decision-making activities of the sort expected of businessmen or numerous varieties of persons involved with decision-making in the relatively formal group. While there is no intent here to disparage the work of these researchers, it is important that systematic investigation be made of the relationship of information input to the task-oriented group, in terms of measurable output.

Goals of the Present Study

The present study was designed to repair, in some measure, the five difficulties noted above:

1. An estimate was made of the meaningfulness of information included in treatments, including an estimate of the strength of association of meanings for subjects. In addition, pretreatment information levels were determined as well as the nature of attitudinal factors related to the topic for discussion.

2. Investigation was made of three distinct types of substantive information: numerical, example, and testimony.

3. Two amounts of information were examined -- minimal and augmented -- in addition to a no-information and a full information condition apart from the group experiment.

4. The present study was conducted as part of the regular classroom activities of students of group discussion to minimize obtrusiveness.

5. The present study examined group performances as well as individual variables with multiple dependent measures.

Chapter 2

Methodology and Experimental Design

Subjects.-- Two groups of subjects were used in two separate but related phases of the experiment. In Phase 1, subjects were 69 students enrolled in Speech 1, Speech Fundamentals, and Speech 6, Speech for Business and Professional People, at Louisiana State University, collectively referred to as the Peer Sample. Subjects in Phase 2 are referred to as the Treatment Sample, and included 96 students in Speech 6 who were not included in the Peer Sample. Subjects in both samples were principally freshmen and sophomores. Participation for individuals comprising the Peer Sample was voluntary. Students in the Treatment Sample took part in the study as a regular class activity related to a unit in group discussion.

Materials and Equipment.-- An audio tape recorder was used to tape all conferences and to play introductory and treatment messages. S was provided a written manuscript of the information he heard. A stopwatch was required to time discussion phases.

Procedure.-- The experiment was conducted in two phases.

Phase 1

The Peer Sample was tested in two sessions of approximately 50 minutes each. Instruments 1 and 2 were administered

in session A. Test 1 was a semantic differential test comprised of five concepts with five scales per concept. Concepts represented five possible problem areas for subsequent discussion: Labor Union Strikes, Autocratic Business Management, The Communist Party in America, Industrial Automation, and Guaranteed Minimum Income. The five pairs of polar adjectives were "dirty-clean," "beautiful-ugly," "negative-positive," "reputable-disreputable," and "wise-foolish." Adjectives were drawn from a factor analysis by Osgood, Suci, and Tannenbaum (1957) of the evaluative or attitudinal dimension of meaning. The same set of scales was used for each concept. The Diab procedure was used (Diab, 1967) for measuring attitude and ego-involvement, in which the subject was to mark a semantic differential according to the position on the scale he perceived as most closely approximating his feeling toward the concept and according to other positions he felt he could accept or must reject in relation to the concept. Tests were summed across scales for each concept for value of the anchor position (most acceptable position on the scale), the latitude of acceptance (number of other positions on the scale that are acceptable), the latitude of rejection (number of positions on the scale that are unacceptable), and the latitude of noncommitment (number of positions on the scale that are neither accepted nor rejected). Test 2 consisted of a set of multiple-choice items examined in Test 1. Ten items were included for each of the five areas with four alternative answers for each item. Items

within each area were balanced for level of difficulty, that is, an effort was made to include three difficult items, three easy items and four moderately difficult items for each problem area. Responses were made on IBM answer sheets.

On the basis of tests 1 and 2 a problem area was selected for subsequent discussion. "Labor Union Strikes" proved to be a subject about which the sample had moderate knowledge ($\bar{X}$ = 5.29 items on the 10-item test) and with which there was a low degree of ego-involvement (mean latitude of rejection = 1.12 intervals on the semantic differential). Moderate pretreatment knowledge was desirable in order to insure that treatment information would produce learning, so that subsequent (posttreatment) measures of differential group and individual responses could be attributable to treatments rather than predispositional factors. In addition, low ego-involvement would imply a willingness to receive new information not characteristic of high-involved persons (Sherif, Sherif, and Nebergall, 1965), thus the probability of learning was enhanced. Bartlett's Test of Homogeneity of a Sample (Edwards, 1960) determined that Speech 1 and Speech 6 students comprising the Peer Sample were homogeneous on the information and ego-involvement variables, that is, subjects were drawn from the same population, constituting a viable sample.

Treatment messages were written on the basis of the findings of Tests 1 and 2, concerning the topic "Labor Union Strikes." They were generated in the following manner:

(1) the experimenter consulted with labor economists at Louisiana State University about appropriate subject matter to include in a standard introductory message that would (a) provide sufficient information to introduce the problem in such a manner that intelligent consideration could be given to possible solutions, (b) provide a balance in labor and management viewpoints to avoid bias toward one disputant or the other, and (c) provide information that could be administered in a brief message and still be sufficiently comprehensive for enlightened discussion. It was understood that comprehension of the problem by subjects would be unavoidably limited due to the necessary brevity of messages, but that such limitations would hold across treatments. (2) The experimenter researched the topic for information meeting the above requirements. (3) A standard introduction was written giving a brief history of the labor movement in America, an orientation to the problem of work stoppages, and the logic of collective bargaining. The general introduction was approximately three minutes in length and preceded each treatment message. (4) Six treatment messages were written, the augmented messages differing from the minimal messages in that the latter summarized inferences and facts contained in the augmented texts where practicable, sometimes excluding sections containing the least essential information wherever necessary to achieve a time differential (amount differential). Particular effort was made to cover essentially the same content areas across messages. Some variations in absolute

content necessarily occurred due to inherent differences in statistics, examples, and testimony. Time differentials varied from two minutes to two minutes twenty seconds for the minimal messages and four minutes ten seconds to four minutes thirty seconds for the augmented messages. In each case the augmented messages were about twice the length of their briefer counterparts. The minor time variations among augmented messages or among minimal messages were believed to be unimportant as potential sources of variation in the present study.

In addition to efforts to standardize absolute content and time (amount) differentials, attention was given to balancing the information in terms of favorableness or unfavorableness towards the concept of labor union strikes, as mentioned above. This latter effort was designed to avoid the contingency that a message might present an argument rather than simply give information.

A summary problem statement was written (a) to present a final, concise statement of the problem and (b) to serve as a transition from the message to the conference. The standard summary was added at the end of each treatment message and was approximately 30 seconds in length.

Treatment messages were written according to the procedure just described. Tests 3 and 4 of Phase 1 of the present study were generated from the treatment messages.

For the purpose of Test 3, function words (articles, prepositions, and connectives) and the more common nouns,

verbs and modifiers were excluded from the messages. A list was then made of the content words which remained. A sample of 60 words from the list was cast into the Test of Meaningfulness. Each sample word was listed in the test as a separate item. Beneath each stimulus word on the test form was a set of four possible definitions or meanings for that word. In each case the alternatives were selected from Roget's Thesaurus whenever possible. Additional definitive words or phrases that were needed were taken from a standard dictionary. The subject was asked to select the definition that most closely approximated his understanding of the stimulus word and to record his response in the first column of the specially prepared IBM answer sheet. In the second column of the answer sheet S was to indicate the degree to which the selected definition was associated with the stimulus word, that is, the "strength of association" of the selected definition to stimulus word for that individual. All 60 items were completed in like manner. Complete instructions attached to the test are included in the Appendix. One instruction should be noted here. Subjects were assured that there was no single correct answer as follows:

> ...in most cases most meanings fit and in all items there are at least two equally plausible possibilities. Feel free to give your response to each item without reservation.

Briefly, each subject first selected a meaning from among the four alternatives for a stimulus word and then indicated

the strength of association of the selected alternative to the stimulus word. Responses to the Test of Meaningfulness from the 69 subjects comprised a description of the message in terms of the level of ambiguity for the equivalent Treatment Sample. The mode of analysis is described in Chapter 3 conjointly with discussion of results.

Test 4 was designed to establish pretreatment standards, or norms, of choice of alternative solutions in the sample. Following selection of the problem area described above, the problem was submitted to a panel of experts in labor economics comprised of members of the faculty in Economics at Louisiana State University. The panel was asked (1) to generate a set of possible solutions to the problem of labor union strikes and (2) to rank-order the set in terms of the relative merits of each solution. Four solutions were proposed conjointly by the panel of labor economists and subsequently rank-ordered. Test 4 was designed in the following manner: (1) the solutions generated by the panel of experts were randomly ordered in Test 4; (2) members of the Peer Sample were asked to read a set of instructions (included in the Appendix), to read the four solutions, and to rank the solutions in order of individual preference. Frequencies of responses were recorded for subsequent analysis.

In summary, Phase 1 of the present study consisted of four tests administered to the Peer Sample: Test 1 was a measure of pretreatment attitude and ego-involvement with five prospective subject areas; Test 2 was a measure of

pretreatment information level with each of the five subject areas; Test 3 was a measure of the meaningfulness (degree of ambiguity) of the messages; Test 4 established pretreatment norms for the rank-ordering task.

Phase 2

Ninety-six students enrolled in five sections of Speech 6 were selected for Phase 2. Within each section four or five groups were generated, depending on the enrollment of the given class. Four students comprised each group randomly assigned within each class. The six experimental conditions were randomly assigned to the 24 groups, yielding four groups per treatment. The six treatment combinations were as follows:

1. Minimal-Fact
2. Minimal-Example
3. Minimal-Testimony
4. Augmented-Fact
5. Augmented-Example
6. Augmented-Testimony

The following operational definitions were established for the present study:

I. Evidence Type

A. Fact -- a message that is largely numerical in content

B. Example -- a message that consists largely of specific instances of non-numerical fact

C. Testimony -- statements of opinion of a person or source presumed to be an authority on the subject

of labor union strikes, with citation of the sources

II. Amount of Evidence

A. Minimal -- a message approximately two minutes in length

B. Augmented -- a message approximately four minutes in length

A schedule was established whereby one group was drawn from a given class at the regular class meeting time, ostensibly to participate in an observed practice session in group decision making. The group was taken to a conference room. The experimenter presented a brief orientation to the purposes of the session and the procedures to be followed. Subjects were assured that the observer (E) was not in any way evaluating their performance but was present only to assist in conducting the practice session, and that the conference would be tape recorded, ostensibly for review by subjects individually at a later time if they wished. Subjects were asked to listen to a tape recorded message containing the standard introduction to the problem of labor union strikes, information relevant to the problem, and summary statement. Following Miller and Davis (1968), recommending ready access to information, each participant was given a manuscript of the recorded message. Subjects were told that they might work at their own pace in conference, that is, that they might finish early, but that the maximum time allotted was 20 minutes. The initial step, they were

instructed, was to discuss the issues and information surrounding the problem. At such time as the group felt they were satisfied that all members understood the nature of the problem the group was to indicate to the experimenter that the group was ready to consider the solutions. The set of solutions, identical in wording and form to the set given the Peer Sample, was provided by the experimenter at that point. Discussion resumed with consideration of the solutions. Within the 20-minute time limit the group collectively arrived at a final rank-ordering of the alternatives either by consensus or by majority agreement.

Following the conference, participants were told that an effort was being made to evaluate the program whereby ungraded, out-of-class practice sessions were being used to enrich the Speech 6 unit in group discussion. Each subject was being asked, therefore, to complete a brief rating sheet. Ratings were made on five-point scales on the following items: complexity of the task, difficulty of the task, group performance, own liking for the task, and ratings of individual performances. For the purposes of rating individual performances including the subject's own performance, participants were assigned the position a, b, c, or d, in a clockwise fashion according to the seating arrangement. Participants were dismissed or asked to return to their class as the instructor had previously requested.

Two categories of measures were taken in group sessions. There were individual measures, comprised of the responses

from the 96 participants on the rating sheet just described, and group measures, defined as follows:

A. Time measures

1. Time to completion -- the length of time required in discussion from the opening consideration of the nature of the problem through the final rank-ordering of solutions
2. Orientation -- time required to discuss the problem, issues, and relevant information beginning with the opening statements up to notification by the group that consideration of the solutions was in order
3. Evaluation -- time required to discuss the relative merits of the four solutions following orientation and ending with active advocacy of preferred solutions by individual members
4. Control -- time required for individual recommendation of preferred solutions following evaluation and ending with the final rank-ordering of alternatives

B. Consensus -- complete agreement on ranking assigned to each solution -- no active objection to <u>any</u> of the assigned ranks, or abstention by any group member in the assignment of ranks. R. F. Bales (1953) has suggested the three distinct phases that reoccur in small group conferences which are defined above. The experimenter observed whether ultimate rank-ordering was accomplished by consensus or by majority agreement. A final group measure was the rank-ordering described above.

Experimental Design

A summary of treatment combinations was given above, derived from all possible combinations of the following independent variables:

A. Amount of information
   1. Minimal
   2. Augmented

B. Type of information
   1. Fact
   2. Example
   3. Testimony

Dependent measures included the following:

A. Time to completion of task

B. Time to completion of task phase
   a. orientation
   b. evaluation
   c. control

C. Presence/Absence of consensus

D. Rank-ordering of alternatives by groups

E. Rank-ordering of alternatives by the panel of experts

F. Rank-ordering of alternatives by the Peer Sample

G. Ratings by participants
   1. complexity of task
   2. difficulty of task
   3. rating of group performance
   4. own liking for task
   5. rating of own performance and of performance of each

other participant

Research Hypotheses.-- The following were submitted as research hypotheses in the present study:

General research hypothesis:

Differential types and amounts of information inputs in a group will generate differential performance and ratings of task and performance by participants.

Specific research hypotheses:

1. Increasing the amount of information available to a group will facilitate performance and ratings.
2. Increasing the specificity of information available to a group will facilitate performance and subsequent ratings ("Fact" should be superior to "Example" and "Example" to "Testimony").
3. Supplementary hypotheses
   a. S is likely to rate himself higher than he rates others in his group.
   b. S is likely to rate himself higher than others in his group rate him.
   c. The discrepancy between S's rating of himself, his ratings of others in his group, and ratings of S by others in his group is likely to be less under these conditions:
      1) consensus is achieved in the rank-ordering task
      2) participants rate the task as being neither complex nor difficult

3) participants assign high ratings to their group's performance

4) S's liking for the task is high

5) results of the rank-ordering correlate strongly with rank-ordering of the panel of experts and weakly with rank-ordering of the Peer Sample.

Statistical Design.-- The experimental design was a 3 X 2 factorial one in a completely randomized arrangement with four groups per treatment combination and four subjects per group. Additional statistical analyses were across-treatment correlations of individual and group measures and a Kruskall-Wallis One-Way Analysis of Variance applied to data obtained from consensus and nonconsensus groups. Finally, Chi square statistics were calculated for each cell in the frequency distribution from the Test of Meaningfulness to detect chance or systematic variation in Peer Sample responses.

Chapter 3

Results and Discussion

Results of Analysis of Treatments

Treatment Differences on Individual Measures

Four individual measures were taken from the posttreatment questionnaire in addition to four individual performance ratings. Information amount and type failed to discriminate on ratings of group performance, task difficulty or complexity, or on own liking for the discussion task. No differences were found among treatments on mean performance ratings for self or other positions in the conference group. Results of the factorial analysis are tabulated below.

Table 1

Analysis of Variance for Individual Measures

Complexity of Task

Source	df	SS	MS	F
A	2	1.56	.78	1
B	1	.16	.17	1
AXB	2	1.02	.52	1
Gp/AXB	18	25.25	1.40	1.62
Subjects/Gp/AXB	72	62.50	.87	
Total	95	90.50		

Difficulty of Task

Source	df	SS	MS	F
A	2	1.19	.59	<1
B	1	.04	.04	<1
AXB	2	.40	.20	<1
Gp/AXB	18	14.88	.83	<1
Subjects/Gp/AXB	72	67.50	.94	
Total	95	84.00		

Group Performance

Source	df	SS	MS	F
A	2	1.52	.76	1.01
B	1	.04	.04	<1
AXB	2	2.90	1.45	1.93
Gp/AXB	18	17.38	.97	1.39
Subjects/Gp/AXB	72	50.00	.69	
Total	95	71.83		

Own Liking for Task

Source	df	SS	MS	F
A	2	1.75	.88	<1
B	1	.26	.26	<1
AXB	2	2.90	.67	<1
Gp/AXB	18	26.06	1.45	1.36
Subjects/Gp/AXB	72	76.75	1.07	
Total	95	106.16		

Treatment Differences on Group Measures

Five group measures were: orientation, evaluation, and control phases of discussion, total time in discussion, and presence/absence of consensus on the rank-ordering of solutions. In addition, differences among treatments on the rank-ordering of solutions were examined. Factorial analysis found no discrimination among treatments on any group measure attributable to information amount or type. No differences were obtained among treatments on rank-ordering of solutions. Results are tabulated below.

Table 2

Analysis of Variance
for Group Measures

Orientation Phase (in seconds)

Source	df	SS	MS	F
A	2	32660.33	15330.17	1
B	1	43605.38	43605.38	1
AXB	2	143851.00	71925.50	1.42
Gp/AXB	18	913335.25	50740.85	
Total	23	1133451.96		

Evaluation Phase (in seconds)

Source	df	SS	MS	F
A	2	53808.58	26904.29	1
B	1	28222.04	28222.04	1
AXB	2	46625.58	23312.79	1
Gp/AXB	18	604250.75	33569.49	
Total	23	732960.96		

Control Phase (in seconds)

Source	df	SS	MS	F
A	2	52973.58	26486.79	1.73
B	1	5642.67	5642.67	<1
AXB	2	111411.08	55705.54	3.64
Gp/AXB	18	275600.50	15311.14	
Total	23	445627.83		

Total Time (in seconds)

Source	df	SS	MS	F
A	2	19185.75	9592.88	1.08
B	1	1176.00	1176.00	<1
AXB	2	33500.25	16750.12	1.88
Gp/AXB	18	160610.00	8922.78	
Total	23	214472.00		

Consensus (presence = 1, absence = 2 in raw score

Source	df	SS	MS	F
A	2	.58	.29	1.32
B	1	.67	.67	3.05
AXB	2	.08	.04	<1
Gp/AXB	18	4.00	.22	
Total	23	5.33		

Rank-Order of Solution A

Source	df	SS	MS	F
A	2	3.00	1.50	1.67
B	1	2.04	2.04	2.27
AXB	2	1.33	.67	<1
Gp/AXB	18	16.25	.90	
Total	23	22.62		

Rank-Order of Solution B

Source	df	SS	MS	F
A	2	2.33	1.17	<1
B	1	1.04	1.04	2.03
AXB	2	.33	.17	1.64
Gp/AXB	18	14.25	.79	
Total	23	17.96		

Rank-Order of Solution C

Source	df	SS	MS	F
A	2	.08	.04	<1
B	1	.67	.67	2.03
AXB	2	1.08	.54	1.64
Gp/AXB	18	6.00	.33	
Total	23	7.83		

Rank-Order of Solution D

Source	df	SS	MS	F
A	2	.58	.29	1
B	1	1.50	1.50	1
AXB	2	1.75	.88	1
Gp/AXB	18	30.00	1.67	
Total	23	33.83		

Explanation of "Source" in factorial analysis:

A -- variation among treatments attributable to information type

B -- variation among treatments attributable to information amount

AXB -- variation among treatments attributable to both information amount and type

Gp/AXB -- variation among groups within treatments

Subjects/Gp/AXB -- variation among subjects within groups

Discussion of Results of Treatments

The hypothesis that numerical information, examples and authoritative opinion (testimony), and differential amounts should produce differences in the efficiency (in terms of time consumed) and the quality (in terms of the rank order assigned by the panel of experts) was not supported for the sample of college students and experimental conditions established in the present study. Observations can be made about various aspects of the experiment.

1. Topic sophistication level of subjects.-- Perhaps

the most important single concern in the study reported here is the level of information and subsequent sophistication in the discussion subject area among college students taking part in the study. As noted in Chapter 2, "Labor Union Strikes" was selected over four alternative topics because of low ego-involvement with the topic and a moderate information level. It was assumed that learning would occur as a consequence of information input. Future research should test for learning of information to determine if that assumption of the present study was true. If learning did occur, and if subjects' sophistication on the topic increased, differential amounts of information should have produced identifiable differences in quality of decisions. If substantial learning did not occur, then differences in quality of decisions could not be predicted on the basis of variable amount of information input.

A second question is whether the increase in participants' information level was sufficient to produce observable differences in problem-solving behavior. Research can be designed to discuss a given topic with multiple levels of information, including a control condition, to discover at what point information level begins to discriminate among decisions or other performance variables whose quality is associated with information input and possibly to discover an optimum level of input for that topic and sample of participants. It may be that in the present study even the relatively lengthy augmented messages did not provide

information sufficient to raise the naive subject's level of sophistication with "Labor Union Strikes" to a point where posttreatment sophistication was observably different from the pretreatment level. It is possible that information requirements for knowledgeable decision-making vary from problem to problem and from individual to individual. The theory, not unique in current literature as noted in Chapter 1, could explain in part the inconsistencies related to input information amount among studies conducted previously as well as the null results of the present study.

2. Utilization of treatment information.-- It appears from the present study that subjects do not discriminate among information types as defined here. It may be necessary to include an intermediate step in future research designs concerning information type: in order to assess utilization of various information types in an interactional setting, a content analysis can be made of the conference transcript. The analysis may include a scheme whereby references specifically to treatment information are noted by kind (e.g., "factual" and "inferential") and by frequency, and are compared to verbage not specifically in reference to treatment information. In other words, treatment information can be pre-divided into "pieces" and incidence of those pieces can be noted in the content analysis of post-input discussion. A content analysis scheme would permit an examination of the use of treatment information eliminating the need for the possibly erroneous assumption that the information given will

actually be utilized in discussion.

3. Variable types and "absolute content".-- Concerted effort was made to prepare the various messages so that absolute content was similar, with major differences in the form in which information was presented. It was believed that substance or content should be held constant if differences among treatment combinations were to be attributable to type of information. A difficulty lay in attempts to standardize absolute content because of the necessity to include inferential statements. Such statements were necessary to generate connected discourse, and were characteristic of all messages. Distinctions among messages lay primarily in inclusion of generalized statistics ("fact"), specific instances of strikes with some numerical information ("example"), and a general discussion of strikes ("testimony"). It is possible that the proportion of inferential statements to message differences was greater than differences to similarities. A circumstance of similarity would of course reduce the ability of messages to discriminate on dependent measures, and similarity of absolute content may have outweighed the differences in form.

Pursuing the latter point, it is possible that individuals do not discriminate among forms of information but combine or assimilate all relevant information into inferences regardless of the original form. If a principle product of cognitive activity is inference (or generalization from details of experience), a theory that various types of substantive

information are processed differently may be true, while the product of cognitive activity and application in the form of verbal behavior may be similar regardless of the initial form of the information.

4. Conference length and measures of decision-making success.-- Following the above discussion of "Labor Union Strikes," a twenty-minute conference period may not have been sufficient time to discover the complexities of the problem, apply relevant information, and weigh alternative solutions. Certainly the time limit so severely limited subjects' consideration of the topic that an appreciable level of genuine expertise was prohibited. Future research should, perhaps, have a much more sophisticated sample. A topic should be selected with which subjects are much more intimately familiar, treatments should be more extensive in providing information, and multiple sessions should be utilized in which to consider the problem.

A second suggestion is that the problem should probably have better-defined parameters, that is, it should be selected on the basis of relatively identifiable criteria for the solution of a relatively simple, specific problem (see, for instance, Goldstein, 1957). In addition, following Goldstein, a quality point system should be developed for evaluating group-generated decisions. The considerable complexity of the problem of labor union strikes obviously defies immediate and simple solution, even among labor-management experts. Observation of the 24 discussions in the present study

suggested that the problem for discussion was too complex to be dealt with in the time allotted to messages and to conferences, despite a priori beliefs to the contrary.

Briefly, a priori assumptions and planning of the present study were carefully considered and believed to be sound. Analysis of results and reflection in retrospect have yielded several suggestions by which subsequent research designs may be improved as a constructive effort to generate a more exact science of information genesis and utilization in the group interactional setting.

Correlational Analysis of Individual Measures

A complete correlation matrix of individual measures with levels of significance for all Pearson r statistics is provided in Table 3.

Task Complexity.-- Complexity and difficulty of the task were moderately correlated ($r = .62$). A low correlation was obtained between complexity and group performance ($r = .27$) and between complexity and own liking for the task ($r = .24$). Results confirmed the predictions that a task perceived by participants as complex should also be perceived as difficult, and that liking for the task should be associated with a low level of complexity.

Task Difficulty.-- Task difficulty was related only to rating of group performance ($r = .21$) besides task complexity. "Complexity" and "difficulty" seem to be perceived differently by participants, since difficulty failed to correlate significantly with own liking for the task.

Group Performance.-- Ratings of group performance were moderately correlated with "own liking" ratings (r = .49) and were related to all ratings of individuals including own performance. Results conformed to the expectation that as perception of group performance is positive, ratings of individual performances will also be positive.

Individual Performance.-- Some significant correlations among ratings of individuals were obtained, but these were largely meaningless in the correlation matrix since the only criterion in correlational analysis for designating positions was seating arrangement. The existence of some weak to moderate relationships suggests, however, that analysis of ratings of self, of others, and ratings of a given individual by others might be fruitful. That analysis is given elsewhere in the present study.

Interpreting the Correlation Matrix for Individual Measures

Individual measures were obtained from a posttreatment questionnaire, each rating being given on a five-point scale. A rating of 1 had the following meaning: low level of task complexity, low degree of task difficulty, high level of group performance, high degree of own liking for the conference task, and high ratings of individual performance. All 1 ratings, therefore, were designated as positive and all 5 ratings indicated a negative evaluation on each of the dependent variables. Task complexity and difficulty are positively related to the other individual measures when the

former were perceived as comparatively simple and easy respectively.

Table 3

Correlation Matrix for Individual Measures

	Task Diff.	Gp. Perf.	Own Liking	Rating of a	Rating of b	Rating of c	Rating of d
Task Comp.	.62**	.27**	.24*	-.07	.05	-.01	-.04
Task Diff.		.21*	.13	-.07	.08	.02	.03
Gp. Perf.			.49**	.37**	.26**	.41**	.52**
Own Liking				.10	.12	.15	.27**
Rating of a					.08	.49**	.35**
Rating of b						.20	.22*
Rating of c							.27**

*P<.05

**P<.01

Correlational Analysis of Group Measures

Orientation, Evaluation, Control, and Total Time.-- As would be expected, time measures correlated significantly with each other. Since orientation, evaluation and control periods were mutually dependent, reduction of the length of one period was reflected in a complementary increase in one or both of the other two periods. Examination of mean phase times indicated that the orientation phase was the longest on the average (10 minutes 6 seconds) followed by evaluation and control (6 minutes 12 seconds and 2 minutes 32 seconds respectively). Mean total time was 18 minutes 50 seconds of the allotted 20 minutes.

Solutions.-- As reflected in subsequent sections of the present paper, solutions D and A were selected most often by treatment groups as the top-ranked alternatives. Moderate relationships given in Table 4 among solutions suggest that mean rankings over the 24 discussion groups were similar. Mean rankings obtained were as follows: solution D, 2.08; solution A, 2.13; solution B, 2.21; solution C, 3.58.

Consensus.-- Presence or absence of consensus in assignment of ranks to solutions was associated significantly only with length of the control phase of discussion. For statistical analysis presence of consensus was assigned the value of 1, absence of consensus, 2. Since the correlation between consensus and length of the control phase is positive (r = .42), the attainment of consensus required less time in the control phase in consensus groups (1 minute 52 seconds) than

in nonconsensus groups (3 minutes 53 seconds). It appears that consensual agreement expedites group decision making in the critical advocacy phase.

A complete correlation matrix for group measures including significance levels is given in Table 4.

Table 4

Correlation Matrix for Group Measures

	Eval.	Control	Total	Con.	Sol. A	Sol. B	Sol. C	Sol. D
Orient.	-.62**	-.45**	.50	.01	-.13	-.15	.08	.17
Eval.		-.29	.01	-.16	.11	.00	.16	-.17
Control			-.12	.42*	.02	.35	-.24	-.15
Total				.33	-.06	.16	.14	-.14
Con.					.00	.14	.05	-.12
Sol. A						-.48**	.24	-.58**
Sol. B							-.08	-.30
Sol. C								-.62**

*P<.05

**P<.01

Consensus and Similarity of "Own," "Others," and "by Others" Ratings

The present study encompassed two measures of group cohesiveness: (1) the presence or absence of consensual agreement on the rank-ordering of solutions and (2) relative similarity of ratings of own performance ("Own"), one's ratings of performance of others in his discussion group ("Others"), and ratings of an individual by others ("by Others"). Consensus will be discussed in the present section in relation to information type and amount and in relation to the three rating types.

Information Amount and Type and Consensus

Neither information amount or type produced differential behavior on the consensus variable. As Table 5 indicates, only in the Minimal Fact condition were all four participating groups able to agree by consensus; in all other conditions results on the consensus variable were mixed.

Table 5

Number of Consensus and Nonconsensus Groups per Treatment

	Treatment					
	Aug. Fact	Min. Fact	Aug. Ex.	Min. Ex.	Aug. Test.	Min. Test.
Consensus	3	4	1	3	2	3
Noncon.	1	0	3	1	2	1

Consensus and Accuracy in Rank-Ordering

Analysis of decisions (rank-order by decision type compared with rank-ordering of the panel of experts) indicated that neither consensus nor nonconsensus groups were in accord with rankings by the panel of experts. Neither agreed with the panel of experts of any rank assigned the four solutions, as indicated in Table 6. In fact, consensus and nonconsensus groups were closer to agreeing with each other than agreeing with rankings by the panel. Although consensus groups

Table 6

Solution Rankings by Consensus Groups, Nonconsensus Groups, and the Panel of Experts

Solution	Ranking Source: noncon. groups	panel of experts	cons. groups
A	2.12 (2)	3	2.12 (1)
B	2.38 (3)	4	2.12 (1)
C	3.62 (4)	1	3.56 (4)
D	1.88 (1)	2	2.19 (3)

preferred solutions A and B while nonconsensus groups preferred solution D, mean rankings were identical for solution A and very close for solutions B and C. The finding suggests, following earlier discussion of null results of factorial analysis, that the level of sophistication on the topic for participants was too low, even after information input, to facilitate agreement.

Consensus and "Own" and "Others" Ratings

It was found that the presence of consensus in rank-ordering was associated with differences in ratings of "Own" performance and one's ratings of performance of others, as expressed in Table 7. While "Own" ratings are separated by only .20 of one interval on the five-point rating scale, "Own" ratings are clearly higher on the average in consensus

Table 7

Mean Ratings of Own and Others Performance by Consensus and Nonconsensus Groups

	Agreement Type	
	Consensus	Nonconsensus
Own	2.08	2.28
Others	2.18	2.25

groups. The prediction that one's ratings of "Own" and "Others" performance should be more similar for consensus groups than for nonconsensus groups was not supported. The latter finding may be interpreted as an indication that greater cohesiveness existed in consensus groups than in nonconsensus groups to the extent that performance of self and others was perceived by participants to be somewhat better in groups reaching agreement by consensus. The small difference obtained may be viewed as being more important than first glance would indicate when one considers that all ratings across subjects were high, reflecting a reluctance to rate self and one's associates low. The frequency with which

each rating was assigned on posttreatment questionnaires is given in Table 8.

Table 8

Frequency of Individual Performance Ratings

Rating	Frequency	Per cent
1	103	26.82
2	171	44.53
3	59	15.36
4	38	9.90
5	13	3.38

It has already been shown that a disparity existed between perceived success and actual success in decision making, in terms of expert decisions by the panel of labor economists. If ratings were adjusted, e.g., if a rating of 1 were assigned to the best obtained individual rating and a 5 were assigned to the lowest obtained rating, distances among ratings would increase. Adjusted distances (differences) may be viewed as comparable to smaller differences obtained from rating sheets in the experiment, subsequent analysis indicating important differences exist in "Own" and "Others" ratings for nonconsensus and consensus groups. Adjusted ratings were not computed because a computer program was not available, but the probable increase in rating differences can be easily inferred in a general manner.

Consensus and "Others" and "by Others" Ratings

Ratings of others are more similar to ratings by others in nonconsensus groups than in consensus groups, a finding

consistent with comparison above of "Own" and "Others" ratings (see Table 9). However, a given individual's ratings by others in his group are higher in consensus groups, a finding which is also consistent with above findings. Table 9 indicates again that on the whole, scores were high and separated by small differences.

Table 9

Mean Own, Others, and by Others Ratings of Performance

	Agreement Type	
	Consensus	Nonconsensus
"Own"	2.08	2.28
"Others"	2.18	2.25
"by Others"	2.10	2.27

Averages are sometimes incomplete indices for a clear view of data. Moderate support to the "difference" conclusion is given by analysis of individual groups. The highest "by Others" rating was 1.25, obtained in one consensus group. The second-highest "by Others" rating was 1.58, also in a consensus group. Next best was a 1.67 rating obtained in two consensus groups and one nonconsensus group. Confounding a statement of trend regarding "by Others" ratings, however, is the fact that the best "by Others" mean rating for a treatment combination was obtained in the only condition clearly identifiable as a nonconsensus condition (Augmented Example). Table 10 provides mean "by Others" ratings by treatment combination.

Table 10

Mean "by Others" Ratings
by Treatment Combination

Aug. Fact	Min. Fact	Aug. Ex.	Min. Ex.	Aug. Test.	Min. Test.
2.42	2.21	1.79	1.97	2.19	2.29

Summary of Findings Related to
Group Cohesiveness

A categorical statement of differences in cohesiveness between consensus and nonconsensus groups would be ill-advised. On the one hand individual performance ratings were higher in consensus groups indicating that perceived success in decision-making was superior when consensual agreement was present. On the other hand ratings were more similar in nonconsensus groups indicating greater perceived equality of performance when consensus was not achieved. Second, large differences in ratings between consensus and nonconsensus groups were not obtained on the average. The small differences that <u>were</u> obtained, however, suggest that further research should be done to replicate results. Suggestions made earlier in the present chapter for improvement of research design could produce larger, more clearly-defined differences.

<u>Ratings and Treatment Combinations</u>

Reported above was the fact that factorial analysis yielded no significant differences among treatments on "Own" ratings and that ratings of "Others" and "by Others" were not examined statistically. Drawing on responses on the

questionnaire items, it was possible quickly to analyze the three types of ratings with the Kruskall-Wallis One-Way Analysis of Variance (Siegel, 1956, pp. 184-193). H statistics were calculated for "Own" ratings (H = 2.33), "Others" ratings (H = 5.24), and "by Others" ratings (H = 4.75), with 5 degrees of freedom (k-1). Since k (the number of experimental conditions) was greater than five, H closely followed the Chi square distribution. A Chi square (or H) of 12.8 with 5 degrees of freedom was required for rejection at the .05 level of significance (two-tailed test) of the null hypothesis that the six treatment samples were from the same population. None of the H statistics obtained were sufficiently large enough for rejection of the null hypothesis leading to the conclusion that no differences existed among treatments on the three rating types. However, rating types may be viewed from the standpoint of nonstatistically significant trends. Data given in Table 11 indicate mean ratings in the three types, rank-ordered by treatment combination. Clearly the exact same rank-order of treatments existed on all three rating types. The augmented example condition was superior in encouraging high ratings of self, others, and ratings by others, even though a statistically significant difference was not obtained. A prediction was that increasing the amount and specificity of information should facilitate discussion and enhance subsequent measures. However, the most specific information, statistical fact, was comparatively inferior to example and testimony in producing favorable

Table 11

Mean Ratings Rank-Ordered by Type and Treatment Combination

Rank	Own	Mean	Others	Mean	by Others	Mean
1	Aug. Ex.	1.94	Aug. Ex.	1.86	Aug. Ex.	1.79
2	Min. Ex.	2.00	Min. Ex.	2.08	Min. Ex.	1.97
3	Aug. Test.	2.12	Aug. Test.	2.19	Aug.	2.19
4	Min. Fact	2.12	Min. Fact	2.21	Min. Fact	2.21
5	Min. Test.	2.38	Min. Test.	2.25	Min. Test.	2.29
6	Aug. Fact	2.44	Aug. Fact	2.75	Aug. Fact	2.42

individual ratings. Recalling that ratings of group performance were related to both "own liking for the task" and all ratings of individual performance, the trend indicated in Table 11 suggests that even when statistically significant differences did not obtain, relative ease of reception and use of non-numerical information facilitated group cohesiveness and mutual satisfaction with the task. A resulting inference is that messages that are largely numerical in content are more difficult to process and use in discussion, with comparatively less liking for the message-processing task and greater disenchantment with performance of oneself and of others. Amount was also related to mutual satisfaction with performance (see Table 11), though treatment differences were not statistically significant.

Comparison of Rankings of Solutions by Treatment Groups, the Peer Sample, and the Panel of Experts

When decisions of treatment groups, the peer sample, and the panel of experts were compared, little agreement on ranks was obtained. Specifically, the prediction that increases in information amount and specificity would produce decisions more in line with rankings by the panel of experts than those rendered by the peer sample was not supported. In fact, the peer sample (69 subjects who ranked the solutions individually) agreed with the panel of experts on the second-ranked alternative, solution D, and the third-ranked alternative, solution A, while treatment groups failed to agree with the panel on the ranking of any solution. The finding is perplexing and a theoretical explanation is not readily available. It appears that the partial agreement between the peer sample and the panel of experts was coincidental. Table 12 gives mean rankings assigned by the three ranking sources.

Table 12

Comparison of Rankings by Treatment Groups, Peer Sample and Panel of Experts

Solution	Peer Sample	Treat. Sample	Panel of Experts
A	3 (2.31)	2 (2.13)	3
B	1 (2.07)	3 (2.21)	4
C	4 (3.28)	4 (3.58)	1
D	2 (2.27)	1 (2.08)	2

Results and Discussion of the Test of Meaningfulness

In Chapters 1 and 2 a rationale and method were presented for development of a Test of Meaningfulness for the present study. Briefly, it was believed that treatment messages should be defined in terms of their meaningfulness to subjects who receive those messages. A test was constructed which included a sample of 60 lexical items contained in the six treatment messages and was administered to a sample of students equivalent to the 96 treatment subjects. No effort was made to distinguish among messages utilized in the six experimental conditions. Lexical items from all six messages were pooled for the test. A level of "meaningfulness" was established from results of the test. Two separate responses were required of subjects: 1) designation of one meaning for each of the sixty items and 2) designation of the strength with which the individual associated the selected meaning with the stimulus word. Results are given in two parts in this section of the present study including appropriate discussion of the test and its limitations. The 60 stimulus words selected as test items are given in Appendix C with astericks by the items found to be "ambiguous."

An item was defined as ambiguous if one of two conditions, or both, existed: 1) if three or four meanings for an item were designated with approximately equal frequency, or 2) if three or more judgments of strength of association occurred with approximately equal frequency. In other words, an item to which responses were inconsistent among alternatives or

among judgments was to that extent ambiguous since different meanings were perceived and different judgments of association were made across the 69-member sample. The Chi square statistic was used to determine if cell frequencies were different from chance expectations. Calculations revealed that frequencies of meanings of 17 plus or minus 7 in a given cell (a given meaning) were required to detect a departure from chance expectation at the .05 level of significance. Similarly, calculations indicated that frequencies of judgments of given strengths required to detect departures from chance expectation were 14 plus or minus 7 at the .05 level of significance with four degrees of freedom. Frequencies of selected meanings were scored as deviating from expected frequencies, therefore, if they fell outside the range 9-23, and frequencies of judgments were scored as deviating from expected frequencies if they fell outside the range 8-20. An item yielding three or more frequencies within the range was considered ambiguous. An item whose frequency of responses fell outside the range on two or more alternatives or judgments was considered meaningful. In somewhat simpler terms, a response frequency that was expected by chance indicated that meaning or judgment had received its proportionate share of responses. If over half the response frequencies on an item were expected frequencies as established by the Chi square statistic the item was designated as ambiguous.

Analysis of response frequencies indicated that all but two items were considered ambiguous by the above definition.

Thirty-five items were designated as ambiguous on the basis of balanced response frequencies of judgments of relative strength of association alone. Twenty-two items were categorized as ambiguous on the basis of both balanced selection of alternative meanings and balanced judgment of strength of association. Only one item was ambiguous on the basis of balanced selection of meanings alone.

Qualifications of the Test of Meaningfulness

The very high occurrence of "ambiguous" items must be carefully qualified. First, it was believed that both distribution of selection of meanings and distribution of judgments of strength of association measured the degree of ambiguity of items, as noted above. However, selection of a particular meaning for an item and judging the strength with which that meaning seems to be associated with the item may be measuring two somewhat different aspects of the item's "meaningfulness" to the respondent. Further development of the measuring device and modes of interpretation is absolutely necessary to identify exactly what the test is measuring and to maximize the instrument's usefulness as a research tool. Results of item analysis bear out the need for caution in generalizing from the present test, since one would hardly expect an incidence of ambiguity as high as that yielded by the test.

A second concern involves interpretation of ambiguity in terms of wide frequency ranges established by Chi square analysis. While statistically accurate, loadings of responses only in the upper third of total possible responses designated

an item as "meaningful." If "meaning" frequencies were taken alone, 23 items would be classified as ambiguous while 37 would be designated as meaningful. If balanced frequencies on both measures were required for designating an item as ambiguous, only 22 items would be classified as ambiguous with 38 items termed meaningful. With wider "meaningful" response ranges the frequency of "meaningful" items would increase.

Third, it should be recognized that lexical items lifted out of context lose some degree of meaningfulness associated with that context. A better test of meaningfulness may be developed that includes judgments made by subjects of lexical items in context.

A theory utilizing the Test of Meaningfulness extensively should require thorough development of the test and modes of interpretation. The present measure of meaningfulness has immediate value, however, in that it represents an initial effort to describe treatment messages in terms of their meaningfulness to recipients. Treatment messages utilized in the present study may be viewed as being relatively ambiguous, as judged from analysis included in the discussion above, and to that extent the distinctiveness of messages was limited. A relatively high level of ambiguity may have contributed to null results obtained in manipulation of message content in the present study.

Summary of Findings in the Present Study

1. Manipulation of information amount and type. No findings of differences were obtained attributable to information amount or type of substantive content on either the individual or group measures.

2. Results of correlational analysis. Several statistically significant correlations were obtained, but all relationships were weak to moderately strong. Of particular interest were significant associations of ratings of group performance and own liking for the group task and the fact that consensual agreement in conference was associated with briefer time required in the control, or advocacy, phase of discussion.

3. Performance quality of consensus and nonconsensus groups. As measured by comparing rank-order of solutions assigned by treatment groups to rank-order assigned by the panel of experts, neither groups agreeing by consensus or groups agreeing by a majority were superior in matching the panel of experts. In fact, treatment groups across the experiment failed to match judgments by the panel of experts on the rank-ordering of solutions.

4. Information type and amount and incidence of consensus. Neither information type nor amount was associated with the incidence of consensus. Contrary to predictions, neither specific information ("Fact") nor augmented information amounts facilitated complete agreement by consensus.

5. Similarity of "Own," "Others," and "by Others"

ratings and group cohesiveness. "Own," "Others," and "by Others" ratings were not more similar in consensus groups, but both ratings of self and of others and ratings by others were higher when consensus was achieved.

6. Rating trend and quality of solution rank-ordering. Ratings of conference performance of all participants were high, with over 71% of all ratings a 1 or a 2. However, failure of any experimental condition to approximate the judgments of the panel of experts indicates a reticence on the part of participants to rate their associates low regardless of the absolute quality of their decision making performance.

7. Information type and amount and group cohesiveness. Although statistically significant differences among treatment combinations were not obtained, trend analysis indicated that essentially nonnumerical information in augmented amounts seemed to facilitate group cohesiveness as measured by perceived quality of performance among group members.

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The purpose of this study is to measure the meanings of certain social, political, and economic topics to various people by having them judge them against a series of descriptive scales. It is important that you respond to each of the items as thoughtfully and honestly as possible, to indicate what these things mean to you. The example should be helpful in completing the scales.

worthless X : A : A : : : U : U worthwhile

or

worthless U : U : : : A : A : X worthwhile

Here is how you are to use these scales:
If you feel that the concept is very closely related to one or the other end of the scale, you should place your X as indicated above.

worthless A : X : : : U : U : U worthwhile

or

worthless U : U : U : : : X : A worthwhile

If you feel that concept is quite closely related to one side of the scale (but not extremely), you should place your check-mark (X) as indicated above.

worthless : A : X : U : U : U : U worthwhile

or

worthless U : U : U : U : X : A : worthwhile

If the concept seems only slightly related to one side of the scale as opposed to the other (but not really neutral), then you should place your X as in the above example.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your X in the middle space.

IMPORTANT: (1) Place your check-marks (X) in the middle of the spaces, not on the colons.
(2) Be sure you check every scale for every concept--do not omit any.
(3) Never put more than one X on a single scale.

ORAL ONLY: ON EGO-INVOLVEMENT

You are asked to perform a second operation on the scales you just completed. Refer again to the examples. Note there are marks A and U, and black spaces on the scale. If you feel there are spaces other than the one you marked with the X that indicate positions with which you might agree, place an A in each of those spaces. If there are spaces which indicate positions with which you cannot agree, place a U in each of those spaces. If there are spaces which indicate positions which are neither particularly acceptable nor particularly unacceptable, leave those blank. You needn't mark every space. You have marked the X; now you may mark one or more A's and/or U's or possibly even leave all the other spaces blank. Mark only those positions on each scale which describe your feelings regarding the phrase above the scales.

You have 10 minutes to complete this test. When you have finished please close your test booklet.

Labor Union Strikes

dirty ___:___:___:___:___:___:___ clean

beautiful ___:___:___:___:___:___:___ ugly

negative ___:___:___:___:___:___:___ positive

reputable ___:___:___:___:___:___:___ disreputable

wise ___:___:___:___:___:___:___ foolish

Autocratic Business Management

dirty ___:___:___:___:___:___:___ clean

beautiful ___:___:___:___:___:___:___ ugly

negative ___:___:___:___:___:___:___ positive

reputable ___:___:___:___:___:___:___ disreputable

wise ___:___:___:___:___:___:___ foolish

The Communist Party in America

dirty ___:___:___:___:___:___:___ clean

beautiful ___:___:___:___:___:___:___ ugly

negative ___:___:___:___:___:___:___ positive

reputable ___:___:___:___:___:___:___ disreputable

wise ___:___:___:___:___:___:___ foolish

Industrial Automation

dirty ___:___:___:___:___:___:___ clean

beautiful ___:___:___:___:___:___:___ ugly

negative ___:___:___:___:___:___:___ positive

reputable ___:___:___:___:___:___:___ disreputable

wise ___:___:___:___:___:___:___ foolish

Guaranteed Minimum Income

dirty ___:___:___:___:___:___:___ clean

beautiful ___:___:___:___:___:___:___ ugly

negative ___:___:___:___:___:___:___ positive

reputable ___:___:___:___:___:___:___ disreputable

wise ___:___:___:___:___:___:___ foolish

Appendix B
Test of Pretreatment Subject Knowledge

The following multiple choice test is to estimate your knowledge of five subjects. Complete the test as you would any other multiple choice test: on the answer sheet, blacken the letter of the alternative that best answers the question. Do not mark on the test booklet. Answer all questions, even if you are not sure of the answer. You have approximately 25 minutes to complete the test. As soon as you have finished, please check to be sure you have answered all questions on this second test, and to be sure you have marked all scales on the previous test. Then close your test booklet. You will be dismissed as usual at the end of the class period.

I. Business Management

1. What is the feature of a job situation that workers report to be most preferred?
   a. high salaries
   b. inexpensive insurance programs
   c. a high level of responsibility
   d. good supervisors

2. What criterion do workers usually feel best describes good supervisors?
   a. he's a good guy
   b. he's honest
   c. he's exacting in production requirements
   d. he respects his workers' feelings and intelligence

3. Approximately what percentage of blue-collar workers in the United States are members of unions?
   a. 9.5%
   b. 50%
   c. 33.4%
   d. 68.7%

4. What generally seems to be the best provision for communication among employees?
   a. gripe boxes
   b. interdepartmental memoranda
   c. bulletin boards
   d. social contact

5. What is a primary cause for autocratic leadership in business and industry?
   a. a lack of understanding of the needs of subordinates
   b. a desire to insure efficient operations
   c. mass production techniques
   d. a basic callousness of management-type people

6. What provision is usually made by labor unions to facilitate worker-management communication?
   a. suggestion boxes
   b. face-to-face confrontations
   c. assignment of a steward
   d. none

7. What relationship exists between a worker's knowledge of his function in the total industrial operation and his satisfaction with his job?
   a. usually such a knowledge will increase his satisfaction
   b. a worker feels better if he doesn't know much about the industry, e.g., how small a part he is of the whole
   c. it doesn't matter whether he knows or not
   d. he only needs to know what his department does

8. Can an employee get acceptance of his innovative ideas in business and industry?
   a. it depends on the size and complexity of the industry
   b. he never has an opportunity, regardless of the size of the operation
   c. if he voices an innovative idea he probably will be fired for questioning management's intelligence
   d. it is necessary to go through a union representative

9. What does "autocratic" mean?
   a. pleasing personality
   b. automatic
   c. dictator-like
   d. mild-mannered

10. Human relations problems seem to crop up most often in
   a. industries with small worker-supervisor ratios
   b. industries that produce mainly by hand labor
   c. industries with complex tasks for workers
   d. industries that use mass production techniques

II. Labor Unions

11. What provision is made to limit workers' right to strike?
   a. the Mann-Whitmey Act of 1934
   b. Congressional resolution
   c. the Taft-Hartley Act
   d. no restrictions exist

12. Unions in what basic industry has struck at least once in the past few months?
    a. the dockworkers industry
    b. the steel industry
    c. the canning industry
    d. the automotive industry

13. In what industry was "labor monopoly power" first established?
    a. the trucking industry
    b. the railroad industry
    c. the coal-mining industry
    d. the electric power industry

14. What is the national organization encompassing most unions?
    a. The A.F. of L. - C.I.O.
    b. The Office of Job Opportunity
    c. The National Organization of Unions
    d. The National Labor Board

15. Where is the individual state's power in labor controls?
    a. right-to-work legislation
    b. a state has no controls
    c. right-to-unionize legislation
    d. The Manpower Development Act

16. What is the theoretical purpose of labor unions?
    a. to facilitate a wage-price spiral
    b. to intimidate management
    c. to guarantee political freedom for members
    d. to give collective power to members

17. How many nation-wide unions are there in the United States?
    a. 226
    b. 87
    c. 150
    d. 1200

18. What was the approximate annual income of the Teamsters Union in the last decade?
    a. $20,000
    b. $250,000
    c. $2,000,000
    d. $50,000,000

19. What is the most current basis for criticism of labor unions?
    a. murder and terror
    b. exorbitant dues
    c. excessive lobbying power
    d. endangering national security

20. What was the leading issue in strikes in 1970 next to general wage increases?
    a. interunion matters
    b. plant administration
    c. social security plans
    d. improved plant facilities

III. Government Income Subsidies

21. What is the highest percentage increase in unemployment insurance benefit payments for an individual state in fiscal 1970-1971?
    a. Louisiana -- 28%
    b. Florida -- 81%
    c. New Hampshire -- 198%
    d. none of the above are anywhere close

22. The new federal tax cut program will probably produce a loss in federal revenue of about
    a. 50 million dollars
    b. 50 billion dollars
    c. 550 million dollars
    d. 12 billion dollars

23. In regard to administration of welfare programs, individual states
    a. have considerable discretion in welfare matters
    b. have no control over the various programs
    c. must clear all welfare proposals through HEW
    d. there are no welfare programs specifically at the state level

24. A program of guaranteed minimum income means
    a. a person no longer would have the incentive to work
    b. Social Security would be replaced by the new program
    c. a work incentive will become part of the requirement for receiving aid
    d. states will be forced to use more of their tax money for welfare programs

25. The new federal tax cut program will mean
    a. less tax money returned to the states
    b. less expenditure for foreign aid
    c. lower price supports for farmers
    d. average annual tax savings of over $100 for low-income families

26. Current criticism of corporation pension plans centers around the fact that
    a. government control of pension plans has increased to the danger point
    b. some people don't know what they have coming to them
    c. companies can't afford the plans
    d. pensions are too small in most companies

27. Since 1950, payments of pension benefits are
    a. up 80%
    b. down 27%
    c. up 1711%
    d. about the same

28. The amount of social welfare paid by state and federal governments in 1971 was about
    a. $16.3 billion
    b. $8.2 billion
    c. $104 million
    c. $143 million

29. The closest thing to guaranteed minimum income in the past has been
    a. tax breaks for low-income families
    b. public welfare
    c. Social Security
    d. minimum wage legislation

30. The main thing wrong in the past with government income supplements has been
    a. not enough people receive benefits
    b. laws have varied a lot from state to state
    c. insufficient amounts have been given out
    d. work incentives have not been built into the programs

IV. Automation

31. "Automation" can best be described as
    a. use of computers for statistical analysis
    b. any procedure in which a machine system does a job
    c. assembly line procedures
    d. use of office machines

32. What is the current unemployment rate?
    a. 2.8%
    b. 6.0%
    c. 5.3%
    d. 7.5%

33. Total civilian employment for the first quarter of 1972 was
    a. 72,350,000
    b. 80,600,000
    c. 113,100,000
    d. 50,000,000.

34. What is the percentage of major businesses and industries that currently use automated procedures to some degree?
    a. 30%
    b. 65%
    c. 50%
    d. practically all

35. The expected change in the unemployment figure from the end of 1971 to the end of 1972 is
    a. 2.8% to 6.4%
    b. 6% to 5%
    c. 7.5% to 4%
    d. 5.3% to 8%

36. What was the Gross National Product in 1951 and 1971?
    a. 328,400 million dollars and 1.040,500 million
    b. 20,286 million dollars and 200,006 million
    c. 271,162 million dollars and 609,427 million
    d. 464,800 million dollars and 689,300 million

37. One principal effect of automation on the worker is that
    a. a person doesn't need as much education as he used to
    b. salary increases are possible due to increased production
    c. a worker is usually happier with the automated job
    d. less social isolation is experienced by the worker

38. What can humans in industry do that computers and other machines can't do?
    a. nothing
    b. regulate sensitive processes
    c. take dictation
    d. organize and realize profits

39. What is the average annual pay for blue collar workers compared to 1951?
    a. 1951: $2800 -- 1971: $3500
    b. " 3400 -- " 7300
    c. " 6000 -- " 8000
    d. " 4000 -- " 10,000

40. What provision is made for people who are displaced by machines?
    a. no provisions -- the person is usually out of luck
    b. retraining programs are established in many industries
    c. it's really no problem, since hardly any new developments are taking place in automation
    d. displaced persons are usually placed on early pensions

V. Communism

41. How does the American Communist Party differ from the traditional political party in the U.S.?
    a. it doesn't have membership standards
    b. it is loosely organized
    c. it has no real interest in national affairs
    d. it doesn't run candidates for election

42. What Western country has a Communist Party visibly active in national politics?
    a. England
    b. Switzerland
    c. France
    d. West Germany

43. What is the Communist position in regard to forceful overthrow of government?
    a. forceful overthrow is rarely justified
    b. forceful overthrow is always justified
    c. a policy of autonomy for nations is best
    d. forceful overthrow is justified only when all else fails

44. In Russia, what amount of property is privately owned?
    a. about 40%
    b. about 27%
    c. about 61.5%
    d. very little

45. What is the Communist philosophy in regard to the individual's rights and responsibilities in society?
    a. political autonomy for everyone
    b. the State comes first
    c. the individual comes first
    d. a fine balance should exist between individual rights and responsibilities

46. How great an increase in membership has taken place in the American Communist Party in the last 20 years?
    a. hard to tell, since figures are not available
    b. a moderate increase
    c. a very large increase
    d. actually, there has been a decrease

47. What is the USSR's proportionate expenditure for education as compared to the United States?
    a. the USSR spends far less than the USA in proportion to Gross National Product
    b. expenditures are about the same
    c. the USSR spends a significantly greater proportion of its GNP for education than does the United States
    d. the main difference is that the United States spends proportionately more of its GNP for pre-school programs

48. What recent major step has this country taken to improve relations between the USSR and the United States?
    a. lifted the import surcharge on Russian goods
    b. sent an ambassador to the USSR for the first time in years
    c. allowed Soviet newspapers to be available to U.S. libraries for the first time
    d. agreed to increase trade with the USSR

49. When was the Communist Party founded in the United States?
    a. 1919
    b. 1932
    c. 1958
    d. there is none, since the Communist Party is outlawed in this country

50. The communications medium of the Communist Party in the United States is
    a. The Hammer and Sickle
    b. Pravda
    c. Red Star
    d. The Worker

Appendix C
Test of Message Meaningfulness

This test is to find out what certain words or terms mean to various people. You have before you a set of key words or terms, each with four possible meanings. You also have an answer sheet, which has been specially adapted to this test. On the answer sheet columns one and three are for selections of meanings from the four alternatives. Columns two and four are for your estimate of the strength of association of the meaning selected for each item. For example, if you are given the item below:

1. REPRIMAND
   1. rebuff
   2. consure
   3. scold
   4. disapprove

If you select, for example, meaning 3, "scold," on the answer sheet by item number 1 you would blacken space 3. Immediately to the right, in column two under "Strength" you would indicate the degree to which you feel the meaning you have selected describes, defines, or otherwise relates to the key word. 1 indicates the strongest relationship of meaning to key word and 5 represents the weakest association. Please ignore the numbers (31-60) in column two; simply record your estimate of association on the scales just opposite key words one through thirty. The third column is for selection of the meanings to items 31-60. Ignore the numbers in the fourth column, pairing those scales with the items in the third column. Again, the first scales are for your selection of meanings, the adjacent scales for your estimate of the strength of association of meanings to key words.

1. Completely blacken the space selected on the answer sheet. Either a pencil or pen will do.
2. If you use a pencil and make a mistake, be sure and erase the mistake completely. If you use a pen, mark an X through any answer on which you make a mistake or change your mind.
3. On this test <u>there is no single correct answer</u>; in most cases most meanings fit and in all items there are at least two equally plausible possibilities. Feel free to give <u>your</u> response to each item without reservation.

Asterisks by items in the Test of Meaningfulness indicate the source(s) of ambiguity in the following manner:

*meaning only
**strength of association only
***meaning and strength of association

1. ALTRUISTIC***
   1. foolish
   2. unselfish
   3. philanthropic
   4. lofty
2. EXERT**
   1. expend
   2. exercise
   3. put forth
   4. toil
3. STATUS QUO**
   1. present conditions
   2. existing state
   3. of the state
   4. mostly
4. INTERVENTION***
   1. intrusion
   2. mediation
   3. intercession
   4. interference
5. FACILITIES**
   1. conveniences
   2. utilities
   3. appliances
   4. accommodations
6. GENERATE**
   1. produce
   2. beget
   3. engender
   4. give rise to
7. EQUITABLE**
   1. ethical
   2. just
   3. equal
   4. decent
8. AUTHORITATIVE**
   1. official
   2. commanding
   3. dictatorial
   4. weighty
9. NEGOTIATION**
   1. stipulation
   2. bargaining
   3. dickering
   4. mediation
10. CURTAILS**
    1. clips
    2. turns
    3. pares
    4. shortens
11. CONFORM**
    1. correspond
    2. agree
    3. routinize
    4. comply
12. ASSESS***
    1. evaluate
    2. appraise
    3. assay
    4. estimate
13. ACUTE**
    1. crucial
    2. keen
    3. penetrating
    4. quick
14. CONCESSIONS**
    1. allowances
    2. grants
    3. acknowledgements
    4. capitulations
15. BLUE-COLLAR WORKER**
    1. wage-earner
    2. grease monkey
    3. supervisor
    4. low-level employee
16. MUNICIPAL**
    1. metropolitan
    2. of a city or town
    3. magnificent
    4. local
17. EQUITY***
    1. fairness
    2. investment
    3. equalness
    4. impartiality
18. NON-MANAGERIAL***
    1. blue-collar
    2. white-collar
    3. low-level
    4. clerical
19. INTER-***
    1. between
    2. within
    3. over
    4. around
20. PROMINENT**
    1. famous
    2. outstanding
    3. conspicuous
    4. protrusive

21. INTRA-***
    1. over
    2. between
    3. around
    4. within
22. PRINCIPAL**
    1. main
    2. foremost
    3. protagonist
    4. pre-eminent
23. MERIT***
    1. excellence
    2. dignity
    3. deserve
    4. rate
24. MODE***
    1. fashion
    2. style
    3. manner
    4. form
25. PROPORTIONATELY***
    1. commensurate
    2. in relation to
    3. uniform
    4. balanced
26. AUTOCRATIC***
    1. despotic
    2. absolute
    3. arbitrary
    4. capricious
27. THEORETICAL***
    1. conjectural
    2. hypothetical
    3. impractical
    4. abstract
28. LABOR UNION***
    1. trade union
    2. social club
    3. professional
    4. power-structure
29. DISPOSED**
    1. settled
    2. eliminated
    3. biased
    4. inclined
30. OUTSTRIPPED***
    1. outran
    2. overtook
    3. outdistanced
    4. gained on
31. SUBSEQUENT***
    1. following
    2. later
    3. posterior
    4. proximate
32. ADVENT**
    1. arrival
    2. appearance
    3. coming
    4. birth
33. GRIEVANCE**
    1. gripe
    2. round-robin
    3. violence
    4. harm
34. CONSEQUENTLY
    1. therefore
    2. and so
    3. hence
    4. as a result of
35. FRINGE BENEFITS**
    1. vacations
    2. coffee breaks
    3. insurance
    4. overtime pay
36. COMPENSATING***
    1. paying
    2. returning
    3. redressing
    4. indemnifying
37. AFFECT**
    1. influence
    2. pretend
    3. concern
    4. afflict
38. BENEFITS**
    1. gains
    2. profits
    3. advantages
    4. worths
39. STRIKES**
    1. assaults
    2. blows
    3. walk-outs
    4. shut-downs
40. EMPLOYING UNITS**
    1. managers
    2. industries
    3. users
    4. departments

41. MEDIATION***
    1. intervention
    2. negotiation
    3. arbitration
    4. intercession
42. LONGSHOREMEN**
    1. shippers
    2. truck-drivers
    3. dock-workers
    4. rowers
43. ASSOCIATED*
    1. related
    2. connected
    3. affiliated
    4. allied
44. CONSTITUTE**
    1. compose
    2. construct
    3. commission
    4. legalize
45. REPEAL***
    1. rescind
    2. revoke
    3. vacate
    4. void
46. EXPENDITURES***
    1. expenses
    2. costs
    3. figures
    4. outlays
47. DEMONSTRATE*
    1. prove
    2. show
    3. testify to
    4. illustrate
48. VARY DIRECTLY**
    1. increase proportionately
    2. decrease proportionately
    3. change relative to
    4. change later on
49. CONTINUUM**
    1. continuation
    2. scale
    3. line
    4. space
50. PRODUCTIVITY***
    1. quantity
    2. of fertility
    3. of efficiency
    4. of labor
51. MONOPOLISTIC***
    1. exclusive
    2. singular
    3. all-encompassing
    4. single-minded
52. FLUCTUATIONS**
    1. ocillations
    2. variances
    3. changes
    4. alternations
53. CONTENTION***
    1. verbal strife
    2. issue
    3. declaration
    4. argument
54. GOADING**
    1. driving
    2. prodding
    3. inciting
    4. urging
55. ANTI-LABOR**
    1. submissive to
    2. favorable to
    3. opposed to
    4. in accord with
56. INCIDENCE**
    1. occurrence
    2. happening
    3. act
    4. influence
57. WIELDED***
    1. exercised
    2. brandished
    3. handled
    4. ruled
58. PRO-LABOR**
    1. submissive to
    2. opposed to
    3. favorable to
    4. in accord with
59. MINIMAL
    1. least
    2. lowest
    3. insufficient
    4. essential
60. PRACTICAL**
    1. useful
    2. workaday
    3. drab
    4. utilitarian

Appendix D
Solution Rank-Ordering Form

In this test you will find an economic question that needs to be answered, accompanied by a statement of a problem, related to the question. This brief questionnaire is designed to learn how various people feel the problem can best be solved. You are given a set of four possible solutions. In order to ascertain the prevailing opinion about which solution is best, you are asked to rank-order the set of alternatives.

Here's how to do this rank-ordering:

In the example, the problem is that many people incapable of supporting themselves or their family do not receive governmental subsidy adequate to maintain a subsistance level of existance. If you feel "federal control of all income subsidy" is the best solution of the four offered, then in the space beside that solution you would enter the number 1. If you feel the second-best solution of the four is "federal aid to state subsidy programs," place a 2 beside that item, and so on.

Example:

____ federal control of all income subsidy

____ waiver of income tax for below-3600 dollars annual income

____ federal aid to state subsidy programs

____ a 50% across-the-board increase in income subsidy under existing programs

You will find that the solutions in the actual task are considerably more detailed than those in the example, but the procedure is the same for rank-ordering.

IMPORTANT

1. A given solution may receive only one ranking.
2. All solutions must be ranked.
3. There can be no ties, i.e., each solution must be assigned a different rank.
4. Numbers must be entered legibly.

Question: Should there be a substantial alteration in present methods of labor-management negotiations, namely collective bargaining, especially regarding labor's right-to-strike?

Statement of Problem: Work stoppages in this country produce significant economic losses to industry, to workers involved in strikes, and to the general economy. The question is raised as to the relative advantages or merits of collective bargaining, or private control of disputes in private industry, including the right-to-strike.

Rank-order the following solutions:

____ A. No essential changes are needed.
Since strikes are essential to the collective bargaining process,
1. The government should intervene only in cases of national emergency.
2. Such intervention should be limited to a) fact-finding and b) a "cooling-off" period (as currently provided by the Taft-Hartley Act).
3. If disputes extend beyond the "cooling-off" period, Congress may pass specific legislation to deal with the specific problem.

Advantages: a) There is no interference from non-private agencies, i.e., bargaining is kept within the private industrial family.
b) If serious national crises occur, government may encourage settlement through the back-to-work order.
c) Normal legislative process is possible as a final resort in settling disputes.

____ B. Strikes should be replaced by compulsory arbitration of disputes as the final resort.
Since strikes are detrimental,
1. The federal government should establish commissions of experts for each of the major industries.
2. These commissions should pursue a two-step process in settling grievances: a) mediation (fact-finding and advice) and b) arbitration (a binding decision in disputes unsettled in step a).

Advantages: a) No strikes could occur, thus no economic loss due to strikes.
b) Mediation, as first step, would encourage reconciliation of disputes without compulsory arbitration.

c) A final settlement can be made whenever it seems in the best interests of the economy.
d) Commissions comprised of experts in each industry would have the expertise and ongoing contact necessary for efficient and knowledgeable decisions.

____ C. The President should be given increased discretionary powers in labor-management disputes.
Since strikes are detrimental,
1. The President should be given a wide range of possible alternative powers to use in national emergency disputes.
2. Alternatives could include fact-finding, compulsory arbitration, and government seizure of industry.

Advantages: a) would create a great deal of uncertainty in labor and industry with respect to what might happen in unsettled disputes, thus placing the two adversaries under great pressure to settle without Presidential intervention.

____ D. The government should adopt a formal system to adopt the non-work-stoppage strike.
Since the harms of strikes are due to actual work stoppages,
1. Expert commissions should be established for all major industries.
2. These commissions would be empowered to devise a set of "penalties" to be in effect during a "strike."
3. One such plan could include these provisions:
   a) All wages and salaries would be decreased by 10% during the "strike" period.
   b) Stockholders would receive no profits during the "strike" period.
   c) If parties settle the dispute within 90 days, everyone gets his money back.
   d) If parties <u>fail</u> to settle the dispute in 90 days, the money set aside goes into the United State Treasury, and another 90-day period starts.

Advantages: a) If the dispute is settled in 90 days there would be no loss to either workers or industry.
b) There would be no adverse effect on the general economy, since production would not be halted during the "strike."
c) There would be no real interference with the collective bargaining process.

Appendix E.1
Standard Introduction

The topic for today is labor-management negotiations, with particular concern for the effects of work stoppages in the United States and consideration of alternatives to such work stoppages. The information given here is not intended to argue a pro-labor or anti-labor position, but to give some facts by which the relative merits of labor organization may be assessed.

Information contained here was taken from the following authoritative sources: Monthly Labor Review (Dec., 1971); Information Please Almanac (1971); Statistical Abstracts (1970); Labor Economics by Chester Morgan (1962); Prasow and Peters, Arbitration and Collective Bargaining (1970); Labor Fact Book (1965); Fisher, Industrial Disputes and Federal Legislation (1940); and Richberg, Labor Union Monopoly (1957).

As you know, numerous work stoppages, including strikes by labor unions, have occurred over the past few decades. It can be demonstrated that these stoppages often generate considerable economic losses to industry and to the workers involved, and sometimes the effects radiate into other areas of the American economy. But labor has been organized for a long time in this country, with minimal intervention by state or federal governments in labor-management disputes. Why do labor unions exist, and how do they persist in spite of frequently-demonstrated economic losses? For the answers to these questions it is necessary to briefly examine the history of the labor movement in this country.

With the advent of large-scale industrial production, production by machines and large numbers of people in the second half of the 19th Century, came an increasing awareness that large corporations, notably the railroad industry, exerted autocratic control over their employees. Autocratic control made improvement of the worker's situation -- wages, working conditions, etc. -- very difficult, even in those places where employers were relatively altruistic. In effect, there was no way for the individual worker to better himself in the vast majority of cases ... if he protested, he was warned to conform or else find himself unemployed. Growth of the labor movement accompanied industrial growth, with varying modes and degrees of organization, until the war efforts in the first half of this century saw a tremendous growth in labor organizing. At present some 226 unions exist in this country, many with national organizations. This growth enabled the strengthened unions to penetrate areas of decision-making concerning employees that had previously been assumed by management. In short, labor organizations by virtue of their size and control over their

memberships, were able to generate pressure on management, principally by strikes and threat of strikes. Collective bargaining, or voluntary negotiation of contracts between representatives of management and labor, became the standard procedure for contract generation. A balance of power had been established between management and labor, each with a kind of monopoly over its particular resources -- hence the term "collective" bargaining. As a rule collective bargaining has been effective because both parties in a dispute would rather settle differences peacefully rather than suffer losses from strikes, or worse, experience government intervention.

Appendix E.2
Standard Summary

What has been presented here is this: labor has organized in an effort to balance the monopolistic power of management. There are some demonstratable economic losses due to labor's right-to-strike, and there are some advantages to union power in the form of balance of power, ability of collective bargaining to improve the worker's situation, and possible impetus to increased industrial efficiency. The essential question becomes this: Do the advantages of labor organization outweigh the disadvantages, and what, in fact, are the alternatives to current procedures?

Appendix E.3
Treatment Message: Augmented Fact

How significant is the problem of work stoppages? Here are some facts to give you an idea.

In 1945 4,750 stoppages took place with almost 3½ workers involved. Subsequent loss of work time was 38 million man-days. In 1950, the number of work stoppages had increased to 4,843 with fewer workers involved, about 2½ million. Man-days work lost were 38,800,000, an increase over 1945 of 800,000 despite fewer workers being involved. The fact suggests that on the average work stoppages were longer per worker in 1950. 1960 saw a decrease in incidence of work stoppages with 3,333. There were less than half as many workers involved as in 1945, about 1.3 million. Man-days lost had decreased by about half the 1945 total, but the loss was still substantial.

1965 witnessed a reversal of the trend of the previous 20 years, with 3,963 stoppages. The upward trend of increases in strikes continued through 1970 -- the latest year for which figures are available. In 1970, 5700 work stoppages occurred involving 3.3 million workers and resulting in a loss of 66.4 man-hours.

It is difficult to estimate in dollars the loss of production over these years, but it is obvious that the loss of millions of man-hours of production is a substantial loss.

In terms of losses to workers who were idle during strikes, however, an estimate can be made. 1.66 million weeks of man-hours were lost in 1970. In terms of 1967 dollars (value of the dollar in other years being relative to $1.00 = $1.00 in 1967), weekly spendable income (after taxes, F.I.C.A., etc.) for the average worker in 1970 was about $102.72. The resulting loss in income for all workers involved in strikes or other work stoppages in 1970 was about 170.55 million dollars. That's a lot of bread and gasoline.

It is estimated that about 65 to 70% of all business expenditures are for wages and salaries. To very roughly estimate the loss to employers, take the $170 million figure, add an additional 35%, and you have a resulting loss of well over 200 million dollars to industry.

The figures above look impressive, and could readily lead to the conclusion that strikes should be prohibited to avoid all that loss of wages and production. Without denying the importance of those statistics, the losses should be weighed against certain benefits realized from collective bargaining, and certain other facts that give a more complete picture of the situation. The facts

justifying use of collective bargaining, including the strike, can be summarized as follows: 1) strikes are one of the principal sources of power to balance management's power; 2) of the entire labor force in the United States only 15.7% are members of trade unions; 3) costs of living have increased during the years discussed, making real gains (in terms of stable rather than inflated dollars) by union members seem to be in line with gains for bread-winners at all levels.

The first fact, balance of power, has been discussed at some length above. Regarding the size of the unionized labor force in comparison to all bread-winners, refer back to earlier statistics: the 38 million man-days lost in 1945 was only 31/100 of 1% of the total work time in the nation for that year. Similarly the peak year, 1970, in which 66.4 million man-days were lost, actually lost only 37/100 of 1% of the total national work time that year. In other words, a relatively small percentage of the national economic effort was affected by strikes, and direct economic effects to workers was comparatively slight since only 15.7% of all working people were unionized.

Third, the cost-of-living has increased over the past few years at a significant rate, making monetary increments for union members perfectly understandable. The consumer price index, with 1967 as the standard (1967 = 100 pts.), the index for 1950 was 72.1 and the current index is way up to 116.3. Further it should be noted that in terms of stable (1967) dollars, spendable weekly income had increased from $82.25 in 1960 to $92.14 in October, 1971, an average gain for all non-agricultural blue collar workers of less than ten dollars a week.

Appendix E.4
Treatment Message: Minimal Fact

How significant is the problem of work stoppages? Here are some facts to give you an idea.

In 1945 4750 stoppages took place with 3.5 million workers involved. Subsequent loss of work time was 38 million man-days. Fluctuations of the number of strikes occurred for the next 20 years but the trend was generally downward. However, in 1965 a reversal of the trend began. 3,963 stoppages occurred in 1965. The upward trend continued through 1970. In that year 5,716 work stoppages took place involving 3.3 million workers and resulting in a man-hour loss of 66.4 million.

It is difficult to estimate in dollars the loss of production over these years, but it is obvious that the loss from millions of idle man-hours was considerable. It is also evident that the loss to workers was significant.

In order to give a more realistic picture of the effect of strikes on our economic situation, a few facts should be noted: 1) strikes, as discussed earlier, are one of the principle sources of power to balance management's power, making collective bargaining possible; 2) of the entire labor force in the United States, only 15.7% of all workers are members of trade unions (total labor force includes all bread-winners at all levels of employment); 3) costs of living have increased substantially during the years discussed, making <u>real</u> gains for union members moderate.

The first item, balance of power, has been discussed. The second, relative smallness of the unionized labor force, can best be illustrated by the fact that 38 million man-days lost (the 1945 figure) are only 31/100 of 1% of the total work time in the nation for 1945, and the fact that, similarly, in the peak year, 1970, 66.4 million man-days lost amounted to just 37/100 of 1% of national work time for that year. Finally, it easy to demonstrate that the cost of living has increased from a consumer price index figure (1967 = 100 pts.) of 72.1 in 1950 to 116.3 in 1970, and that accompanying real spendable weekly income (in 1967 dollar value after taxes, etc.) has increased only about ten dollars over the last ten years.

Appendix E.5
Treatment Message: Augmented Example

What of strikes? Do a significant number of strikes occur? In what industries? Over what issues? With what results?

Perhaps at least a partial answer can be found in examples. In 1935, over 2,000 strikes occurred. According to Department of Labor figures, 44.3% resulted in substantial gains for the workers involved, the rest ending in small or no gains.

In that same year the milk strike in Wisconsin caused acute distress in New York and Chicago. The Pennsylvania coal strikes caused much inconvenience among consumers.

In 1937 a "sit-down" strike of the United Automobile Workers at Flint, Michigan, was associated with an increase in the number of families on relief from 2500 to more than 7800 within five weeks. The bill for unemployment benefits mounted at the rate of about $10,000 per day during the strike.

The Associated Press estimated that the Chrysler strike (1937) cost Detroit stores $6,000,000.

In April, 1954, the United Auto Workers began a strike against the Kohler Company, Kohler, Wisconsin. Average weekly earnings of Kohler employees were considerably higher than any comparable earnings (Kohler $87.45; entire industry $76.04), and working conditions were notably superior.

At the same time in Milwaukee, some 50,000 Milwaukee unionists threatened to strike and thus prevented the unloading at municipal docks.

In 1964 about 3600 strikes occurred involving 1.6 million workers. Examples: General motors was struck for a month by a quarter-million workers. All gains, including fringe benefits, totaled a 4-5% increase in yearly earnings; United Mine Workers struck for two months for fringe benefits; railroad workers struck Illinois Central Railroad; public school teachers struck by the thousands; Longshoremen struck; and Ford workers struck, gaining an increase over the 1961 contract.

In the railroad industry alone, since 1950 31 major disruptions of railroad services have occurred, involving a million employees.

Finally, in 1970 over 5,000 strikes and other work stoppages took place.

The examples serve to illustrate the point that strikes over the past several decades <u>have</u> occurred, and that sometimes the effects have been severe. A reminder is in order, however, of the purposes for which the right to strike has been protected all these

years:

1) Even though gains for union members are not always made through collective bargaining, threat of a strike is usually sufficient to promote a genuine effort on the part of management to bargain.

2) Overall it appears that gains have been made for the wage-earner and non-managerial salaried employee. In 1959 hourly wage rates were almost four times those in 1929. In the same period the hourly cost of living increase was considerably less.

3) Gains for union members do not seem to be proportionately out of line with gains in non-union ranks.

4) Total national work-time lost has been only about a third of a per cent annually.

5) It appears that in at least some places collective bargaining has forced industry to employ more efficient methods to increase production with less input of capital per production unit.

In 1970 general wage changes was a central issue in almost 50% of all strikes, followed in order of frequency by plant administration, union organization and security and inter- or intra-union matters.

On what grounds do unions bargain? Unions reason this way:

1. A firm should pay wages comparable to those paid for similar jobs in other firms.
2. Wages should vary directly with productivity.
3. Wages should at least keep up with cost of living increases.
4. Industry should pay whatever it is able to pay.

Appendix E.6
Treatment Message: Minimal Example

What of strikes? Do a significant number of strikes occur? In what industries? Over what issues? With what results? Perhaps at least a partial answer can be found in examples.

In 1935 the milk strike in Wisconsin caused acute distress in New York and Chicago. The Pennsylvania coal strikes that same year caused much inconvenience among consumers.

In 1937 a "sit-down" strike of the United Automobile Workers at Flint, Michigan, was associated with an increase in the number of families on relief from 2500 to more than 7800 within five weeks. The bill for unemployment relief mounted at the rate of about $10,000 per day during the strike.

The Associated Press estimated that the Chrysler strike (1937) cost Detroit stores $6,000,000.

In Milwaukee in 1954, some 50,000 Milwaukee unionists threatened to strike and thus prevented the unloading at municipal docks.

In the railroad industry alone, since 1950 31 major disruptions of railroad services have occurred, involving a million employees.

Finally, in 1970 over 5,000 strikes and other work stoppages took place.

The examples serve to illustrate the point that strikes over the past several decades <u>have</u> occurred, and that sometimes the effects have been severe. A reminder is in order, however, of the purposes for which the right to strike has been protected all these years: 1) collective bargaining, with threat of work stoppages as an inherant characteristic, has apparantly been largely effective in establishing a balance of power that makes negotiation possible; 2) Overall it appears that improvement of the worker's condition has been possible, since income advances have generally outstripped rising costs of living; 3) Total national work time lost has been less than 1% annually.

On what grounds do unions bargain? They reason this way: 1) A firm should pay the going wage; 2) Wages should vary directly with productivity; 3) Wages should at least keep up with cost of living increases; 4) Industry should pay whatever it is <u>able</u> to pay.

Appendix E.7
Treatment Message: Augmented Testimony

Is the incidence of work stoppages significant? Montly Labor Review studied stoppages in the railroad industry over the past 20 years and noted that a total of 31 major disruptions of railroad services entailed over 7 million man-days lost by almost a million employees in the period between 1950 and 1970. The government publication concluded that "since rail facilities constitute a significant segment of the U.S. transportation system, a national railroad work stoppage curtails a substantial portion of the movement of essential freight without other modes of transportation compensating for this loss." The National Railway Labor Act provided for a publicly-published, step-by-step pursuit of bargaining and mediation. The National Mediation Board disposed of 3984 cases between 1950 and 1970. Other figures can be quoted to support the contention that numbers of work stoppages due to unionization have been significant and accompanying economic losses to industry as well as to labor have been likewise significant.

Labor expert Richberg wrote in 1957 that powers enjoyed by unions should be curtailed in some way because of these losses. Other authorities like T. R. Fisher of Columbia University support the position that labor needs unhampered collective strength in order to demand equitable wages and working conditions.

Labor Fact Book (1965) has it that organized labor's number one objective in the 89th Congress a few years ago was to obtain a repeal of Section 14(b) of the Taft-Hartley Act, which permits states to establish right-to-work laws in a state and effectively resist complete domination of the labor force by labor unions. Unions are important in exerting pressures in the American economy, without a doubt.

Although the move to repeal Section 14(b) of Taft-Hartley failed, other signs of labor's influence are apparant. Examination of labor facts in the 1971 Statistical Abstracts shows that wages have increased steadily over the years, and increases for blue-collar workers have on the average outstripped rising living costs, improving the condition of the wage-earner and non-managerial salaried employee. Labor economist Dr. R. E. Smith of L.S.U. suggests that perhaps the direct economic benefits of collective bargaining are exaggerated. But in the opinion of others like economist Chester Morgan, unions do balance strike losses by 1) gaining benefits for union members (and often, other employees, it might be added); and 2) by serving as

highly effective mechanisms for goading employers into using more efficient methods in order to pay for concessions made to unions and still maintain adequate profit margins.

Motives of unions may sometimes be non-economic. Morgan reports that "one view has it that the upper limits of management concessions and the lower limits of what labor is willing to accept in bargaining are determined largely by bargaining strength and skill." There is considerable evidence to support this point of view. A second view also supported by evidence, like the right-to-work example above, suggests that non-economic motives -- especially political -- move both parties to agreement somewhere along the continuum of possible final positions.

Morgan goes on to point out that factors which affect the decisions of union leadership are probably similar to those which affect managerial decisions, in that they are primarily practical in nature as opposed to theoretical. Consequently, the severe damage that theoretically could occur due to labor's power to strike doesn't seem to occur -- not very often, at least. According to Professor Morgan, by-in-large the arguments unions advance in attempting to secure benefits have a practical orientation. Unions argue that 1) a firm should pay wages comparable to wages paid in other firms for similar job demands; 2) wages should vary directly with productivity, i.e., a worker should receive his share of his company's economic growth since he is partly responsible for that growth; 3) wages should at least keep up with cost of living increases; and 4) industry should pay what it is <u>able</u> to pay.

In summary, the decision to unite so as to achieve a meaningful degree of bargaining strength reflects at once not only a desire to match varying degrees of monopsonistic power wielded by employing units with varying degrees of monopolistic power through labor organizations, but also a general lack of faith on the part of labor in the ability of economic forces in the labor market to assure economic equity and security to the industrial worker.

Appendix E.8
Treatment Message: Minimal Testimony

Is the incidence of work stoppages significant? Monthly Labor Review studied stoppages in the railroad industry over the past 20 years and noted that a total of 31 major disruptions of railroad services entailed over 7 million man-days lost by almost a million employees in the period between 1950 and 1970. Other figures can be quoted to support the contention that numbers of work stoppages due to unionization have been significant and accompanying economic losses to industry as well as to labor have likewise been significant.

Labor expert D. R. Richberg suggests that powers enjoyed by unions should be curtailed in some way because of these losses. Other experts, like T. R. Fisher of Columbia, support the position that labor needs collective strength in order to demand equitable wages and working conditions.

Signs of labor's influence are apparant. According to Statistical Abstracts (1971) and Information Please Almanac (1971), wages have increased steadily over the years, and increases for blue-collar workers have on the whole outstripped rising living costs, improving the condition of the working man. Labor economist R. E. Smith and others suggest that the direct economic benefits of collective bargaining may be exaggerated. But in the opinion of economists like Chester Morgan, unions do balance strike losses by 1) gaining benefits for union members (and often, for other, non-union employees); and 2) by serving as highly effective mechanisms for goading employers into using more efficient methods in order to pay for concessions made to unions and still maintain adequate profit margins.

Morgan goes on to say that the factors which affect the decisions of union leadership are probably similar to those which affect managerial decisions, in that they are primarily practical in nature as opposed to theoretical. Consequently, the severe damage that theoretically could occur doesn't seem to occur -- not very often, at least. By-in-large, the arguments unions advance in attempting to secure benefits have a practical orientation in that both labor and management prefer wherever possible to avoid strikes and consequences to parties involved.

Appendix F
Posttreatment Rating Sheet

Please make the ratings below as thoughtfully and honestly as possible. Your individual responses will be unknown to anyone but me. Your ratings will help me estimate the effectiveness of this practice conference approach to enrichment of the Speech 6 unit on small groups.

A rating of 1 indicates minimum complexity, minimum difficulty, best performance, or greatest liking for the decision-making task. A 5 rating, conversely, means maximum complexity or difficulty, least satisfactory performance, or least liking for the task. On item (E) (ratings of positions a, b, c, and d) please rate the performance of each person in your group by position assigned to you earlier, including your own position. On the rating scales, circle the number corresponding to your estimate. The adjectives at the ends of the scales are to help identify the meanings of the scales.

(A)	Complexity of the task:	least complex	1 2 3 4 5	most complex
(B)	Difficulty of the task:	least difficult	1 2 3 4 5	most difficult
(C)	Group performance:	most satisfactory	1 2 3 4 5	least satisfactory
(D)	Own liking for task:	most satisfying	1 2 3 4 5	least satisfying
(E)	rating of a:	most satisfactory	1 2 3 4 5	least satisfactory
	" " b:	"	1 2 3 4 5	"
	" " c:	"	1 2 3 4 5	"
	" " d:	"	1 2 3 4 5	"

Appendix G
Instructors' Information

Please give your students the following information about the activity one meeting prior to my beginning to work with the classes.

Members of the speech faculty with specialties in organizational communication, especially small group process, will be helping us in the present unit. They will be working with groups of four students during the next few meetings, beginning with our next class meeting. At the beginning of the session, one or two groups will be taken from the classroom to conference rooms to participate in practice discussions. Audio tapes will be made of all sessions so that you may hear the playback of your discussion if you wish. <u>You will not be evaluated in any way in these practice sessions</u> -- they are set up only for enrichment of the unit on small group process by giving you a guided practice conference. You would not have the opportunity otherwise because of limitations of class size and class time. I hope you will each make the most of your opportunity for expanded experience in conference communication. Details of what procedure you are to follow in conference will be given to you on the day your group meets.

Vita

Edwin Holman Ryland was born December 16, 1940, at Texarkana, Arkansas, and was adopted as an infant by Mr. and Mrs. George B. Ryland. He received his elementary and secondary education in Grady, Arkansas, graduating from Pine Bluff High School in Pine Bluff, Arkansas, in 1958. In 1963 he received the B.S.E. degree from State College of Arkansas in Conway, and the M.A. degree from the University of Arkansas at Fayetteville in 1965. He taught for four years in Missouri high schools and for two years at Henderson State College, Arkadelphia, Arkansas, before beginning graduate study at Louisiana State University in 1970.

EXAMINATION AND THESIS REPORT

Candidate: Edwin Holman Ryland

Major Field: Speech

Title of Thesis: Information Input and Performance in Small Decision Making Groups

Approved:

J. Donald Ragsdale
Major Professor and Chairman

Max Goodrich
Dean of the Graduate School

EXAMINING COMMITTEE:

Irwin H. Lane

Claude W. Braden

Claude L. Shaver

Perry H. Prentice

Date of Examination:

July 5, 1972